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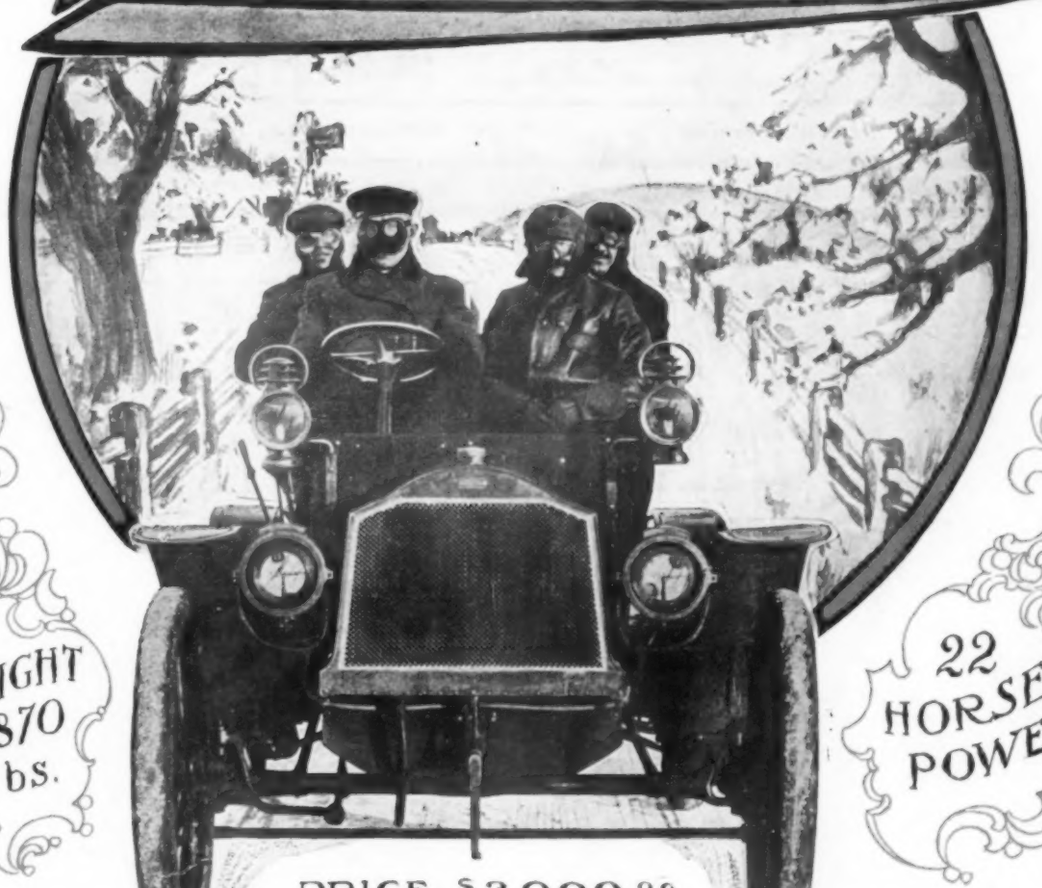
THE AUTOMOBILE

WEEKLY NEW YORK—SATURDAY, JANUARY 16, 1904—CHICAGO 10 CENTS

Packard



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PRICE $3000 00

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THE AUTOMOBILE

WEEKLY NEW YORK—SATURDAY, JANUARY 16, 1904—CHICAGO 10 CENTS

Rushing Metal Body Work on Show Cars

LESS than a decade ago, it will be remembered, aluminum was such a comparatively rare metal in the market that it was used very little in the industries, being reserved for the arts, like the precious metals, gold and silver. A variety of novelties were made from it, such as match-boxes, stamp-boxes, pin-trays, card-cases, and many other small objects for which the remarkable lightness of the new metal, its white color and cleanness and the ease with which it could be engraved made it excellently adapted. The world was ringing then with accounts of the peculiar qualities and characteristics of the metal which was known to be the most abundant of all, yet so difficult of extraction from the clay under our feet as to render it costly of manufacture and prohibit its use in many fields for which it was peculiarly adapted In those days we took some pride in displaying a finger ring of aluminum, or a match-box or card-case. But later, as rapid improvements in reduction processes were invented and utilized, the production increased and the price fell so that the featherweight metal began to be used in place of copper wire on trolley lines, in the manufacture of kitchen utensils, and wherever lightness and strength without ductility or flexibility were prime essentials. The fact that it could not be drawn into tubing nor annealed and pressed into form militated against its use in bicycles, though a few aluminum frames were cast and some aluminum rims were rolled.

To-day the metal has become sufficiently common, although still comparatively expensive, to permit of its widespread use in automobiles of the more expensive types, in some of which it is used extensively. The engine crank-cases with their supporting arms, the transmission gear-cases, and entire bodies are

MAKING AND FITTING ALUMINUM BODIES TO CHASSIS IN AN AMERICAN SHOP

made of it to lighten the cars. The non-rusting and non-combustible qualities further enhance its value for these uses.

There is little that is novel or interesting in the making of aluminum crank and gear casings, as these are cast in molds by processes that differ from the casting of other metals, only as made necessary by the peculiar qualities of the metal, especially its great expansion in solidifying, but the manufacture of aluminum bodies has developed an entirely new industry that is fast growing to important proportions. France first perfected the art and there are in the European republic several concerns that have won international fame for the beauty of their productions, as the Rothschild et Fils, Védrine et Cie, Wahilé & Godard-Desmarest, Kellner et ses fils and others.

In this country the making of aluminum bodies is at present very largely in the hands of J. M. Quinby & Co. of Newark, and Cole & Woop of New York, and the Springfield Metal Body Company of Springfield, Mass., although the Pittsburg Reduction Company includes tonneau seats in its large line of aluminum productions. These, however, are cast instead of being made from the sheet metal, as is the case with the others, and each seat is in one piece including the curved back and the side panel. The United States Aluminum Company of Pittsburg, has also entered the field.

A great deal of interesting work has been going on during the last two months in the body factories on the building of special bodies of new design and superior finish for high-priced cars that will be on exhibition at the New York and Chicago automobile shows this month and next, and many hours of night work has had to be done to get them finished in time. Cole & Woop have been at work on an even score of aluminum bodies for show machines, and as from four to six weeks are required for the completion of such a body from the moment the designs are placed in the hands of the workman, work has had to go forward on all of them simultaneously.

Given the measurements of the frame of a chassis for which a body is wanted, a rough design is made and submitted. Upon approval, the chassis is sent to the body factory and from it full size working drawings are made of the various parts of the body. From these are cut out templets of heavy cardboard or thin wood, having the exact curves it is desired to reproduce in the body. Sections of the proper shape for seat-backs and panels are then cut roughly out of a sheet of cold rolled aluminum, which is the hardest that can be obtained. These sheets come in sizes up to 36 by 120 inches and are of 14 and 12 gauge, or one-fourteenth to one-twelfth of an inch in thickness. Heavier metal cannot be worked with the best success. Owing to the low ductility of aluminum, it cannot be pressed to shape as steel, copper and other metals are, and therefore manual labor has to be employed altogether, the flat pieces being tediously beaten into shape over forms of iron and wood with mallets of wood. A natural supposition would be that a special form would have to be used for every variation in shape, but it is asserted that the experienced workers employed can beat out any shape desired upon four standard forms, obtaining all the long, easy swells, the short curves and many sharp angles in the King of the Belgians bodies, at present much in vogue here, by judicious manipulation of the metal and the mallets and hammers. Only the standard forms are made in cast-iron, the special shapes that are not likely to be much used being made in wood. The form most used at present is an easy double or reverse curve for the King of the Belgians back. This is in the shape of a piece of iron about thirty inches

WORKING TONNEAU SEAT OVER A CAST IRON FORM.

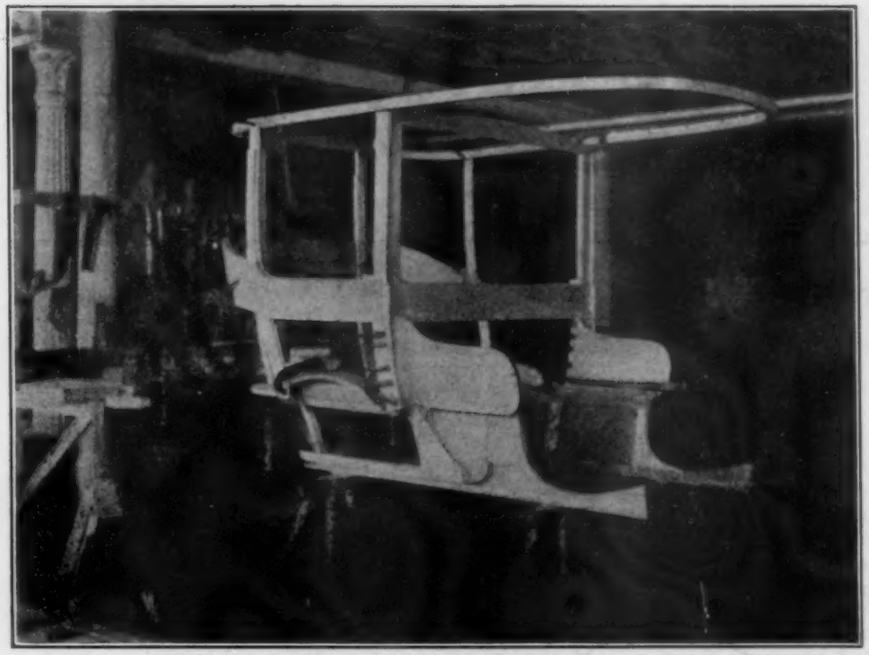
long and three and a half inches wide, flat on the base to rest on a heavy wooden horse or bench. The top surface has the S-curve, carried at the base sharply around the end of the iron and slightly convexed transversely along its full length. The surface is smooth but not highly polished. Over this and other forms the workman dexterously hammers the metal and repeatedly tries it with the templets until it assumes every curve desired and exactly fits the templets.

The beating, however, leaves it rough and full of dents. These are taken out and the surface smoothed by working it over the same form with a long double-handled steel tool flat on one side and convex on the other. This tool is polished all over and after applying lubricating oil to the surface of the metal, a workman rubs it back and forth over the aluminum, at the same time bearing down with as much of the weight of his 180 pounds as he can apply.

The aluminum is then carefully trimmed and fitted to place on a skeleton body frame, usually made of seasoned oak but in some cases of angle aluminum beaten to the proper curves. The backs of the smaller seats are of one piece but the very large ones require two pieces, whose meeting edges are perfectly matched and leave a scarcely perceptible seam or crack. Steel screws are used to secure the edges of the aluminum plates to the frame members, the heads being countersunk in the metal. When all the plates and panels are in place on the framework, a moulding of aluminum strips three-quarters of an inch wide and convex on the outside is nailed with round iron inch nails all along the edges of the body where it is desired to relieve the flat surface. All protruding nail and screw heads, high places and rough corners are smoothed down with rasps, after which the whole metal surface of the body is sandpapered down to an even smoothness that removes all remaining evidences of the beating process.

The complete body is made, of course, in several sections, as the tonneau portion, the front seats and the hood are all separately removable from the finished car. The regular limousine body, however, is built permanently as a unit except for the hood and front seats, the rear enclosed portion being never removed; more of the regular carriage builder's work therefore enters into its manufacture than is the case with the tonneau and surrey bodies. One of the photographs herewith shows the wood skeleton of a limousine body that is being built for a Mors car owned by C. K. G. Billings and upon which the orders are that no expense shall be spared to make it the best that can be produced. To this end, the oak frame members are each worked out of a single piece of wood, including the sockets for windows and the ornamental mouldings and carvings, none of which are tacked or glued on. The pieces are all mortised together and when ready for the application of the aluminum panels will be a rigid skeleton in one unit. The photograph shows it with the members held together in joiners' clamps in which it is repeatedly assembled and taken apart during the process of fitting the members together for trial.

The frames for tonneau bodies are put together in much the same way, but are less elaborate and comprise fewer parts. The seat rim, which is two to two and a half inches wide and an inch and a quarter thick, is screwed to uprights rising from the base pieces, and to straight pieces that form the rear doorway and continue up to the top of the body. One or two other upright pieces rise from the seat ring to the top of the seat back, and several more are fixed at the sides to carry the side panels, the number depending upon the length of the tonneau portion. In all-aluminum bodies these uprights are of aluminum to



LIMOUSINE BODY SKELETON ASSEMBLED IN JOINERS' CLAMPS.

which the edges of the aluminum panels are secured by copper rivets. The top edge of the skeleton is formed of curved wood pieces or curved angle aluminum secured to the uprights, in both cases made flat on top, where they are one inch wide. All the wood members have their corners beveled off. For canopy top bodies a steel socket is formed on the end of a flat bar that reaches from the top of the seat back to the seat rings, to which it is screwed. At the top are two wings that fit onto the top frame member, where they are also screwed.

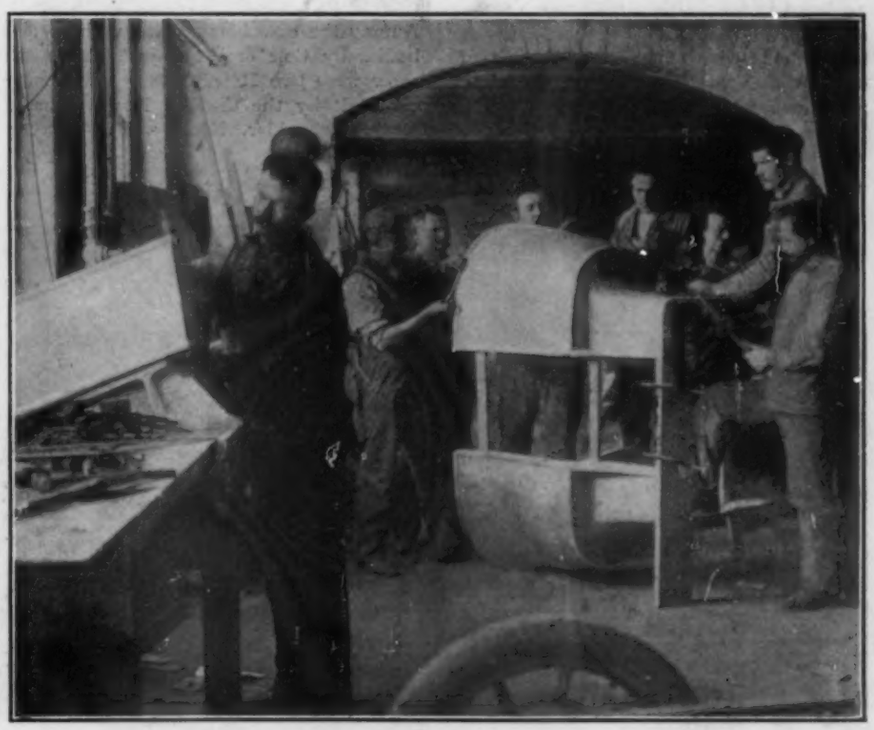
Assuming that the aluminum panels have been screwed or riveted to the framework and sandpapered to smoothness, as described, a two-inch wood moulding or flange is built along the top edge to form the roll and tack the upholstering onto. This moulding is screwed onto the top member of the skeleton in sections most convenient to shape of the various curves and covers the raw edge of the metal, projecting outward about one inch over the side of the body. This is smoothed down along the edges which completes the formative period of the body up to the upholstering and finishing, with the exception of the door and hood. The front seats, of course, are made just as the tonneau seats are and the doors present nothing new in methods.

The hoods are usually made of Russian iron but some are now being made of aluminum. In either case, the side panels are cut out of the sheet and then a series of incisions made for the vanes, which are raised by means of an iron form and correspondingly shaped wood punch with which the metal for each vane is pounded down into the iron form. The usual sheet metal working methods enter into the making of the rest of the hood, which is bent and beaten to form.

As the work on the different sections of the body progresses, they are fitted from time to time to the chassis and to each other to insure their perfect fit when finished.

When it goes into the hands of the finishers, a thick coat of "rough stuff" in the form of a heavy mineral paste is applied to the entire outside surface of the metal with a glazier's spatula or putty-knife. This adheres firmly to the metal and holds the succeeding coats of paint, acting as a filler at the same time. Incidentally, there are no cracks or holes filled with putty to work loose and shake out When dry, the rough stuff is sand-papered until smooth and then a first or priming coat of thin paint is applied. Successive coats of paint and varnish with a rubbing down with pumice stone and polishing with other materials follows, as in all fine carriage building plants. Air drying paints are used, with plenty of drier in the final coats, but there is no enameling and baking in this country. In France baked enamels are used, as a result of which the aluminum becomes annealed and has its strength impaired—to such an extent, it is asserted that a blow which will only indent an American body will crush a hole through the metal of some of the foreign ones, for annealing destroys the strength of aluminum. Another alleged objection to enameling and baking is that finish so put on will chip or flake off when anything comes into contact with the body hard enough to indent it, whereas, with air-drying paint applied over the proper rough stuff the metal will stand bending and hammering back into shape without the paint loosening.

Before the finishing coats are put on, the body goes to the upholstering department, where the seat-cushions are made and the seat-backs tufted. In this work the leather, in grades to suit the purchaser up to goat skins at over forty dollars a dozen, is attached to the back cloth by buttons sewed through the leather at certain points, the leather being folded and curled hair or moss worked under-



PLACING METAL MOULDING AND RASPING DOWN TONNEAU BODY.

neath to form the tufts as the sewing proceeds. When the greater portion of the back has been formed the work is transferred to the body, the cloth being tacked to the mouldings provided for the purpose. The upper roll over the top edge of the seat backs is then tufted and the leather finally tacked into place. The outer edge is then covered with a narrow polished brass moulding that adds to the finish of the cars.

ALUMINUM RACING OR CROSS-COUNTRY BODY.—Built by Springfield Metal Body Co.

In the carriage styles considered modish at present, it is considered essential to have the upholstering roll up over the top of the back seats, so as to avoid all hard edges, and in accomplishing this, American builders declare that they have done a little better than their French predecessors. The trouble previously encountered has been this, that it was necessary to rip off the whole upholstering in order to straighten out a dent in or otherwise repair the aluminum plate, in case of necessity, and that this operation involved an expense of $15 to $20, even though the injury to the aluminum were trifling. With the manner of securing the roll shown in the accompanying illustration—and to the use of which its originators reserve all their rights—it is only necessary to remove the screws, *S*, and the wooden roll frame may then be pushed forward with the upholstery securely attached to it by the buttons *M*, and the bead, *B*, laying the aluminum plate bare for repairing. And when the latter is finished the upholstering is readily replaced in its position, with much saving of time and money.

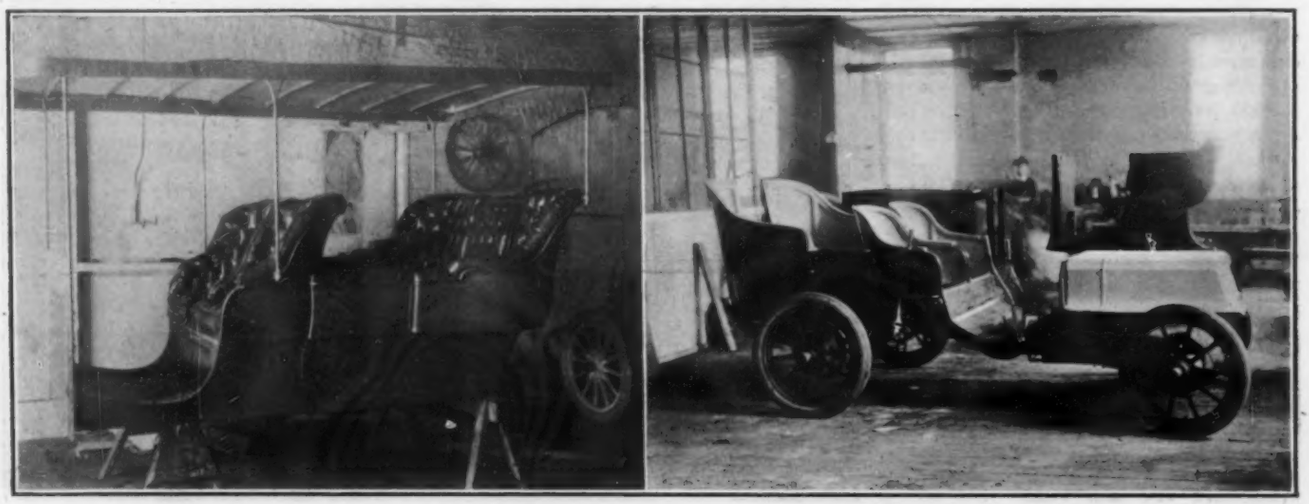
If a canopy top is called for it is made of light oak framing with a top of wood veneer a sixth of an inch thick.

The bodies for the show-cars are all special, so that the work is not quite the same on any two of them, and in fact the whole industry of aluminum body-making requires skill of the highest order in each of its branches, as it is high-priced work and only the best is wanted by the owners of costly cars. Bodies range in cost all the way from $1,000 to $2,000 or more, according to style, design and finish.

SECTION OF REMOVABLE ROLL.

Among the cars being fitted with special bodies by Cole & Woop just before the show were two Howards, the new racing car built by the Christie Iron Works, a Rochet-Schneider, Mors, and a number of other French cars of the finest type. The Howard bodies present especially notable features. One is a seven-passenger tonneau body that will be called the "tonneau de luxe." This is shown prominently in the foreground of the large engraving. It is made on a semi-aluminum and wood frame. The rear portion, instead of the usual folding tete-a-tete seats just back of the operator's seat, has two forward-facing seats with round, swell backs like the rear-most seats. The style is King of the Belgians, and the curve of the rear end is continued down to the base. The tops of the middle seats are only slightly lower than those of the rear seats, and there is a fourteen-inch passageway between them, while the rear door is twenty inches wide. The effect of this construction, as shown in the drawing, is to provide a diminutive parlor car for the wagon road. There is ample room under each of the four forward seats for the feet of the persons sitting behind, so that there will be no uncomfortable cramping. The door in the rear has the customary folding seat for a seventh passenger. Design patent on this body, which will be seen at the New York show, has been applied for by the Howard Automobile Company.

The other Howard body is, for want of a better name, called a combination style. Complete, it is an enclosed body like a limousine, except that there are side doors back of the front seat. There are glass panels in the doors and a hinged glass front. The body is made in sections and bolted together in such a way that the entire top can be removed, together with the upper halves of the doors and the whole front glass, making an open four-seated vehicle. The rear seat and lower halves of the doors can also be removed if desired, leaving only the front seat for a cross-country car.



CANOPY-TOP AND SPECIAL ALUMINUM BODIES FOR MATHESON SHOW CAR AND CHRISTIE RACER.

Pierce Four-Cylinder Touring Car.

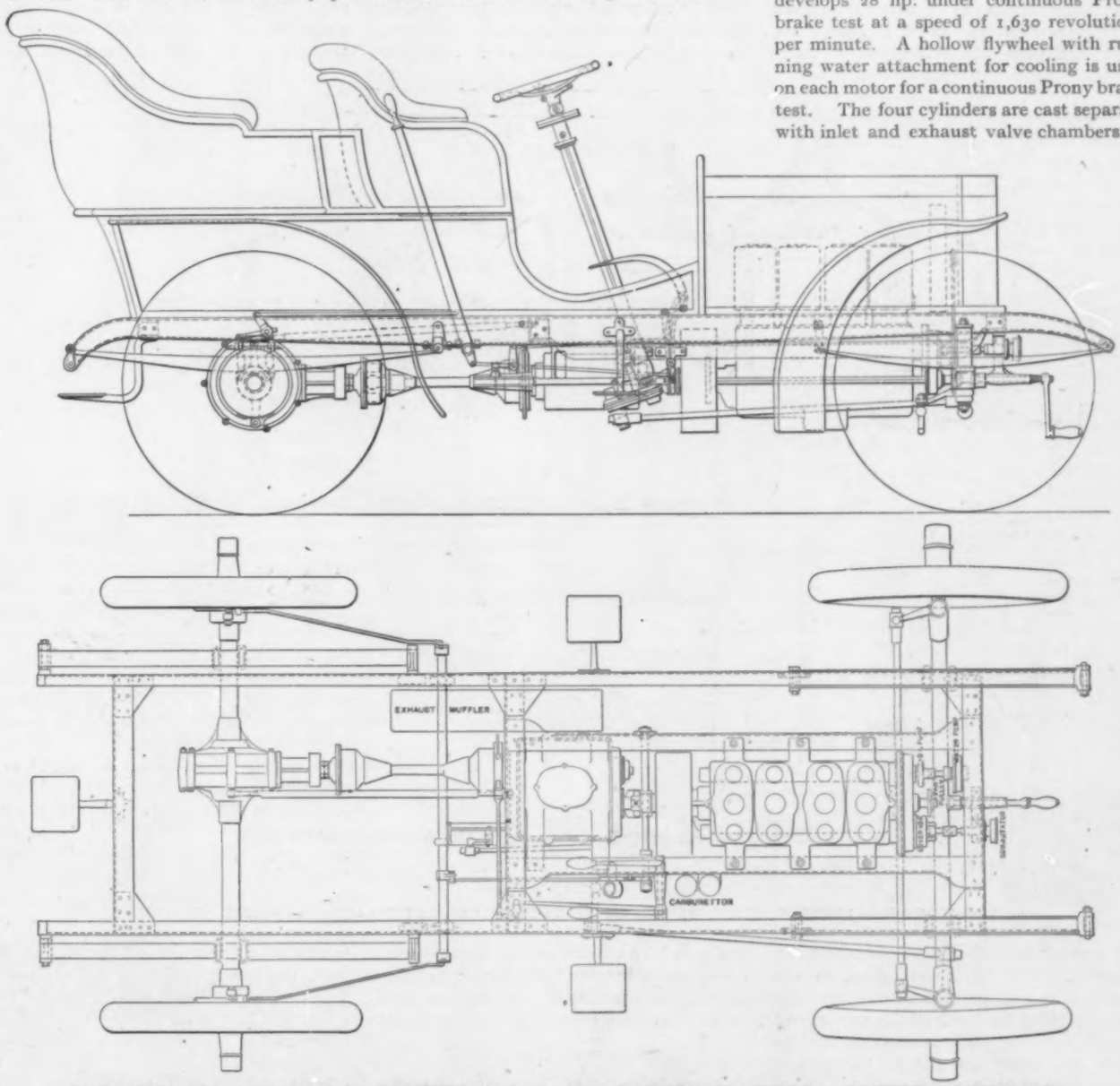
Description of a Modern Multi-cylinder Car with Reproduction of Factory Blueprints---Useful for Reference in the Study of other Cars of Similar General Type.

In addition to the double vertical cylinder, light touring car known as the "Arrow," the George N. Pierce Company of Buffalo have developed a new car equipped with ample power for all kinds of road work. The new car, with full equipment, weighs 2,400 pounds, has a 24-hp. to 28-hp., four-cylinder motor, bevel gear drive, and is fitted with King-of-the Belgians body with independent front seats.

The base of the body to the seat line is constructed of wood, above which aluminum castings are used for tonneau and seat backs, securing in a substantial manner the full effect of the lines of this popular type. The body is divided back of the dash, making the rear more easily removable, the dash being attached to a separate wood frame extending to the front. The full body is supported by a continuous underframe of 3-16 inch pressed steel, 3 1-2 inches deep at the center, 2 3-8 at the end, flanged 1 5-8, 11 feet 3 inches long, and framed 2 feet 10 inches wide, sides formed with down-curved ends to receive the front and rear springs, a subframe for the support of the motor and transmission being carried on a slightly lower level. Easy riding is secured by long springs, 48 inch rear and 38 inch front, attached by non-reversible toggle outside the frame, giving abundant clearance and also provided with rubber buffers for extraordinary road conditions. The long frame gives a 93 inch wheelbase, standard tread, and 34 inch wheels with 4 inch clincher tires are used.

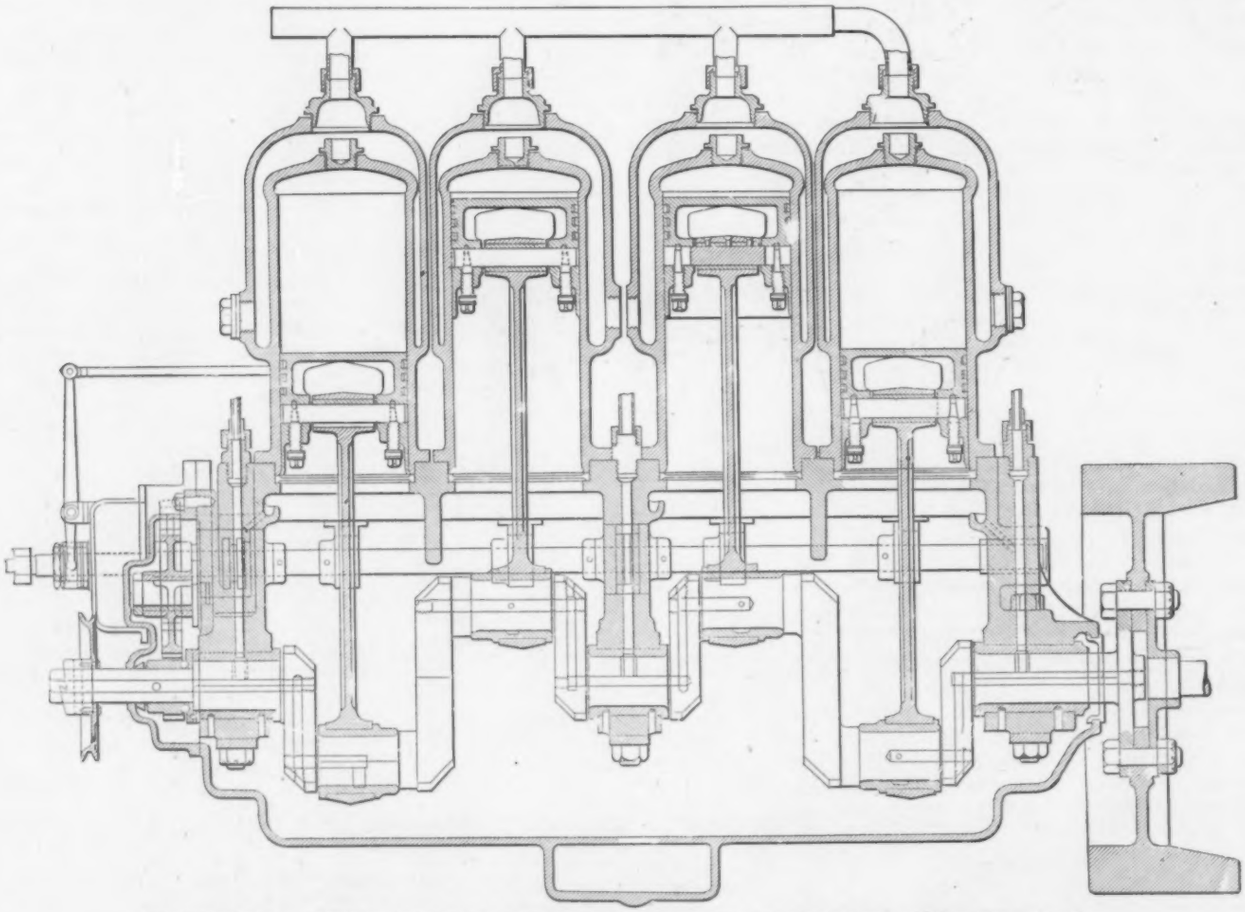
The Motor

develops 28 hp. under continuous Prony brake test at a speed of 1,630 revolutions per minute. A hollow flywheel with running water attachment for cooling is used on each motor for a continuous Prony brake test. The four cylinders are cast separate with inlet and exhaust valve chambers on opposite sides and are interchangeable. Ample space is provided in the casting for water jacketing cylinder, head and valve chambers. The cylinders are finished and ground smooth to gauge 3 15-16 by 4 3-4 inches. The piston trunk carries three expansion rings. The inlet and exhaust



ELEVATION AND GROUND PLAN SHOWING GENERAL ARRANGEMENT OF PIERCE 4-CYLINDER TOURING CAR.

valves are interchangeable, being 1 1-16 diameter and are lifted one-fourth inch by cams on shafts on each side geared to the crank shaft. These valves are easily accessible by removing loose fitting brass valve chamber covers, fitted with a set screw which binds a cast-iron plate with asbestos filled copper gasket in place. The connecting rods are of drop forged steel 10 3-4 inches long with phosphor bronze bushings at each end. Two aluminum castings form the motor base, crankcase and connection below the cylinders, and carry the crank shaft in two outer and one center bearings. The castings meet at the center line of the shaft, the ower half being easily removed, all parts



LONGITUDINAL SECTION THROUGH PIERCE FOUR-CYLINDER MOTOR AND FLYWHEEL CLUTCH.

are accessible and the bearings readily adjusted. The inlet cam shaft is extended to carry the commutator, making it accessible at the front of the motor, and the exhaust cam shaft is also extended to carry the water circulating pump and carries an eccentric which operates an oil pump. An air fan is driven by belt from a pulley on the crankshaft. This arrangement avoids all gears for driving these accessories.

The Lubrication

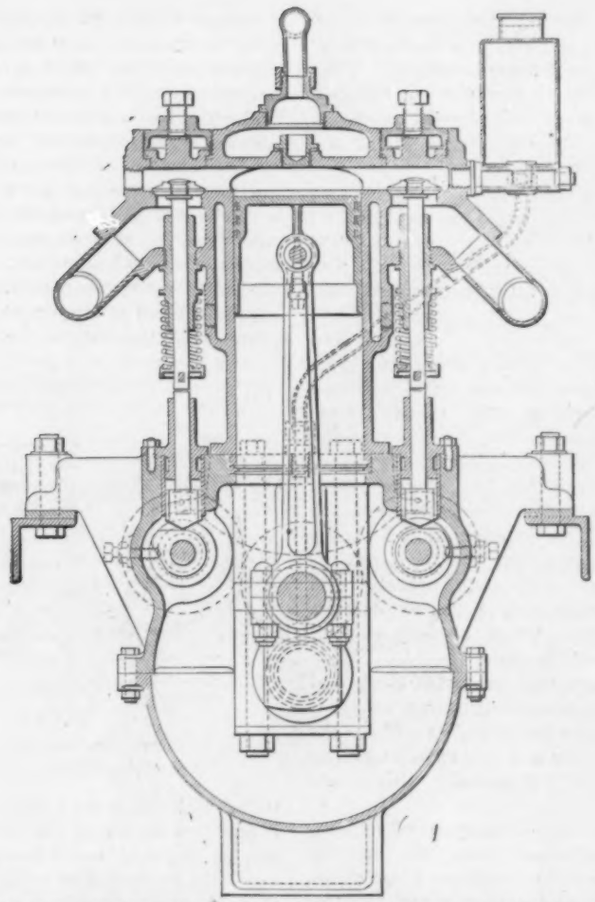
of the motor is entirely from the crankcase reservoir, from which the splash system supplies oilways to crank and connecting rod bearings and splashes cylinder walls. This system is assisted and perfected by a flush gravity system consisting of a small oil tank extending across the top of the motor, fitted with a dash sight level, and with feed tubes to the main bearings, the tank being continuously supplied by pumping oil from the crankcase reservoir. The circulating water is cooled by a Whitlock cellular radiator, which is assisted by an air fan driven three to one motor speed.

The Ignition

may be advanced or retarded by rotating the commutator disk in which four bolts mounted at ninety degrees on springs, form make and break connection from a duplicate storage battery used for the primary circuit, from which the usual spark coils and secondary current produce the spark.

Governor Control.

There is no hand operated carbureter lever, nor is there any hand operated throttle lever on this machine, as is usually supplied on all cars of this type, but instead the governor entirely controls the speed of the motor, and the tension on the governor spring can be varied from the seat. There are only two hand levers beside the speed shifting lever. One is the spark lever for advancing or retarding the spark and the other is the governor-regulating lever, which works in a notched quadrant. This operates on the spring against which the weighted arms of the governor act, and when the lever is in the zero position of the notched quadrant. The spring is then under least compression and the slowest speed of the engine is the result. This is about two hundred revolutions, and the governor acting on the throttle will keep the engine running at this speed, which gives six miles an hour to the vehicle on the high gear. At the same time, if a slight incline is to be ascended, the governor will open up the throttle to full open if the speed of the engine gets below its set speed. In this way, the manipulation of the carriage is rendered exceedingly simple, as the governor will look after the power automatically; and as the governor-regulating lever is advanced, the speed of the engine increases, giving any intermediate speed from six to forty-five miles an hour on the high gear, the spark being advanced so as to fire a little earlier as the speed increases. When the regulating lever is put in the most advanced notch, the governor spring is compressed solid, thus cutting out the governor all together and keeping the throttle full open.



TRANSVERSE CROSS SECTION OF ONE CYLINDER IN PIERCE MOTOR.

It will thus readily be seen that if it is desired to travel at, say, twenty miles an hour over roads with slight grades, no manipulating of the levers is necessary. The governor lever is put in the notch corresponding to this speed and on the level the throttle will be kept partially closed but as a grade is approached, the governor will respond to any slowing down of the motor by opening the throttle and giving the maximum power attainable at that speed. This gives a sustained, uniform speed notwithstanding the state of the roads.

The carbureter is entirely automatic in action and no hand lever is provided for regulating it. As the speed of the engine increases, more air is taken in and as the speed decreases the air is automatically shut off in proportion.

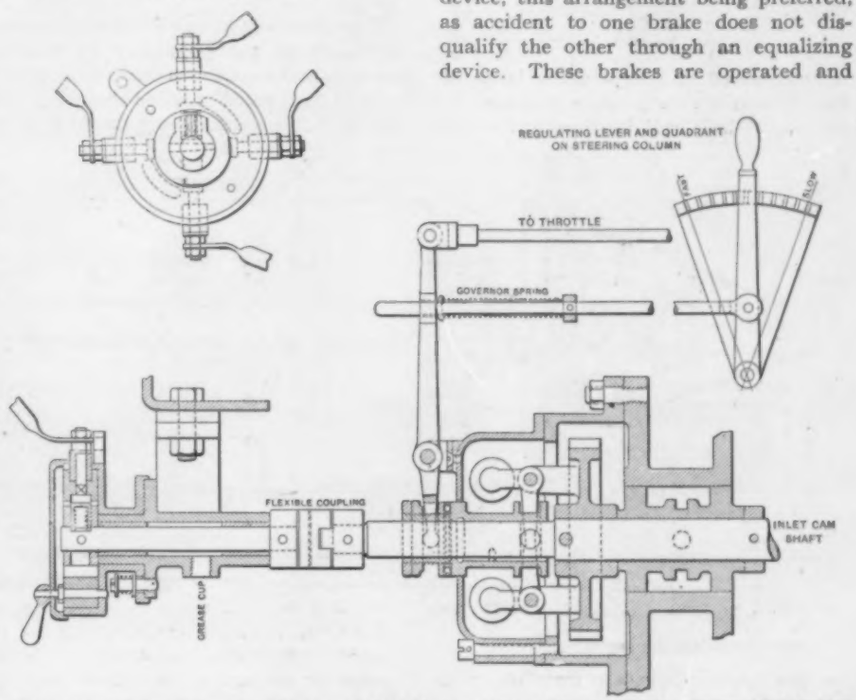
The carbureter adjusts itself automatically to the speed requirements, the air openings being regulated by a spring which is compressed by the excessive suction of the increased motor speed, increasing the air openings as required and closing them as the speed is retarded

Power Transmission.

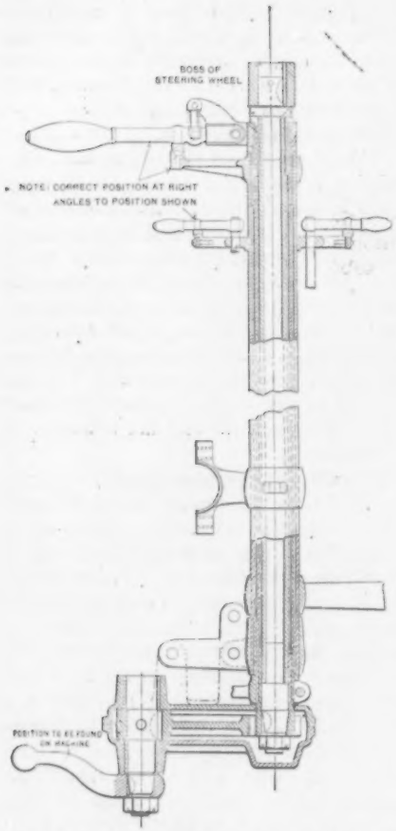
Power is transmitted from the motor through a cone clutch and claw coupling to the sliding gear transmission from which three forward and one reverse speeds are obtained. The sliding gear shafts are mounted in ball bearings, the gears being cut from steel bars. The high speed gears are 4 3-8 inches in diameter and all have 7-8 inch face. The high gears drive at motor speed, the intermediate ratio is 3 to 5 1-2 and the low gear meshes 40 teeth into 12. The transmission is incased for splash lubrication with oil openings to the shaft bearings.

The alignment of the motor and transmission is made by passing a lining-up shaft through the crankshaft and the transmission case bearings and supporting the motor and transmission to bring the six feet of the motor and four feet of the transmission about 1-4 inch above the supporting subframe. When every part is in alignment, clay is put around the feet and the spaces between the feet and the frame are run in with babbitt metal. Holes are then drilled and the feet are bolted to the subframe.

From the sliding transmission the power is carried by a propeller shaft with universals at each end and a sliding-square length-adjustment to a bevel gear and differential on the rear axle. The universals are of liberal proportions and are enclosed in cases filled with lubricant. The bevel pinion shaft is fitted with Hyatt roller bearings. The driving pinion is of mild steel, case hardened, 3 1-4 inches in diameter, the axle gear being 10.6 inches, both incased with the differential for lubrication. A solid 1 3-8 inch shaft suspended by ball bearings, balls 7-8 inch, in a 2 1-4 inch hollow axle transmits to the wheels which are keyed to the shaft with three Woodruff keys. The wheel bearings are near the center line of the wheels, which carry cast-steel brake drums, acted upon by phosphor bronze double acting brake shoes, each side being adjusted from the brake lever without compensating device, this arrangement being preferred, as accident to one brake does not disqualify the other through an equalizing device. These brakes are operated and



SECTION OF MOTOR CONTROL MECHANISM AND COMMUTATOR, WITH SEPARATE SIDE VIEW OF COMMUTATOR.



ARRANGEMENT OF STEERING PILLAR AND MOTOR CONTROL LEVERS.

the clutch released by either a forward or backward movement of the side lever, which is the only side lever on the car. A transmission brake operated by foot pedal is also provided which also releases the motor.

The Front Axle

is constructed of heavy tubing in an inverted arch affording ample clearance for the motor base and is connected to the knuckles by Mercedes type pivot 1 3-8 inches in diameter and 7 1-2 inches long, with phosphor bronze bushings. The knuckle is constructed to give the wheels a dip of 2 degrees and carries them on American ball bearings mounted at the center line of the hub.

The steering is effected by a large wheel operating through a pinion and toothed sector, both made of steel and case hardened so that there is scarcely any perceptible back lash after lengthy use. All the joints of the steering lever are self-adjusting by means of heavy springs and ball joints. The clutch operating lever and shifting gear forked levers are fitted with ball bearings. The speed change lever protrudes from the wheel post to the right under the steering wheel. It is provided with an interlocking device which prevents moving the lever until the clutch is released. This location of the sliding gear lever places the operating devices under the observation of the operator, and as the side brake lever is well to the rear, the seat of the driver is easily entered from his side of the car.

The parts are well protected from mud and dust. A sheet aluminum cover is placed under the motor and extends to the transmission case and this case, as well as the motor case, is practically oiltight and dust proof.

In operation the ordinary speed requirements are obtained from the throttle governor, the motor retaining a fair showing of power under slow speed. Under high speed the car is at its best, rides well and is easily controlled.

Method of Testing High Speed Gasoline Engines.

There has been quite a lot of controversy in regard to the possibility of making accurate and continuous brake horsepower tests of high speed gasoline engines. The George N. Pierce Company have fitted up a testing room and report the following method, formulæ and result of testing engines manufactured by them. Each engine is required to develop its proper brake horse-power before it is put on its running gear.

The brake can be left on all day without heating the brake pulley, the rim of which is of channel section and is supplied with cold water in any required quantity by means of a pipe leading into the inside of the pulley. Another pipe with a feathered edge is allowed to dip into the water in the channel, so that the water as it travels

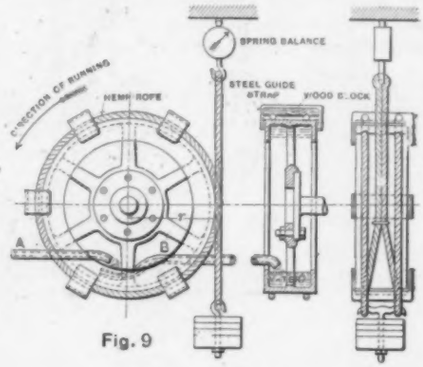


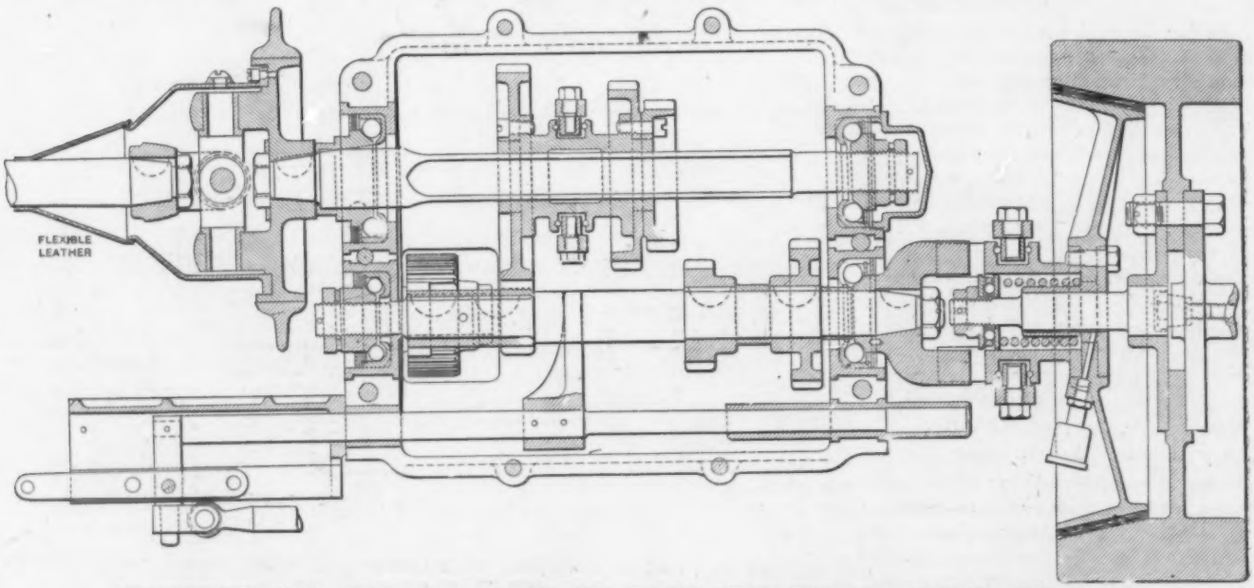
Fig. 9

BRAKE PULLEY AND SPRING BALANCE FOR POWER TESTS.

round with the brake pulley is forced into it and this carries off the heated water as fast as the cold water is supplied. This keeps the brake pulley perfectly cool, and there is very little splash, even in the case of a speed of over two thousand revolutions per minute, which is sometimes attained in the 8-hp. single-cylinder engine tests.

The accompanying diagram shows the method of construction of this brake pulley and brake as applied to the four-cylinder engine.

The brake pulley is made of the same weight as the engine flywheel and is bolted



TRANSMISSION SLIDE GEAR WITH CASINGS AND CLUTCH MECHANISM OF 4-CYLINDER PIERCE CAR.

onto the crankshaft. The hemp rope is wound around as shown and is kept in position by wood blocks which, however, do not touch the brake drum. A steel strap in turn keeps the wood blocks on the pulley. The rope is fixed to the wood blocks by lacing. If nails are used, care must be taken that they do not touch the rim of pulley, or they would heat and burn the rope. No lubricant is necessary and the weight hangs steadier without it. The weight is suspended from the two ends of the rope and the folded part of the rope is suspended on a spring balance, which in turn is suspended from a beam overhead.

To find the actual power developed by the engine:

W = Total weight on rope.

w = Average pull on the spring balance, which must be deducted from W to give the net load.

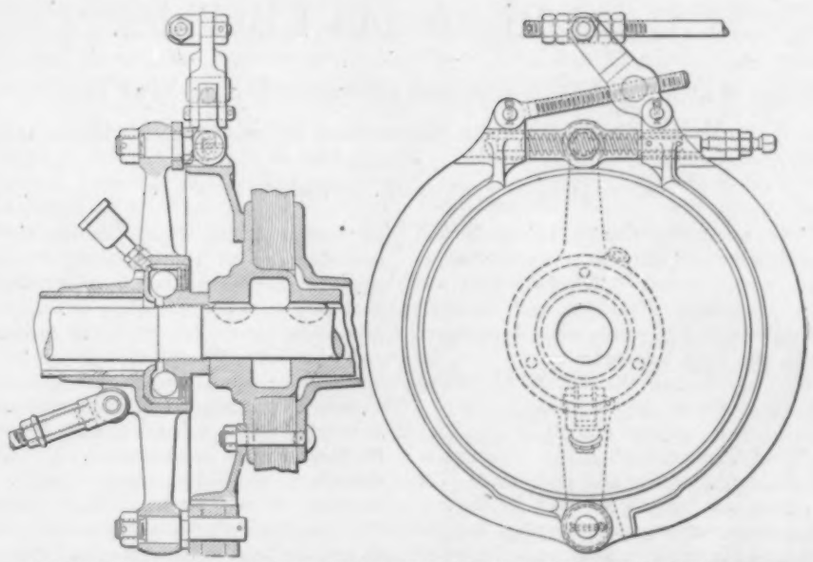
W = Radius of brake wheel and rope to point of suspension in feet. The effective circumference = 2 r.x3.1416.

N = Revolutions per minute.

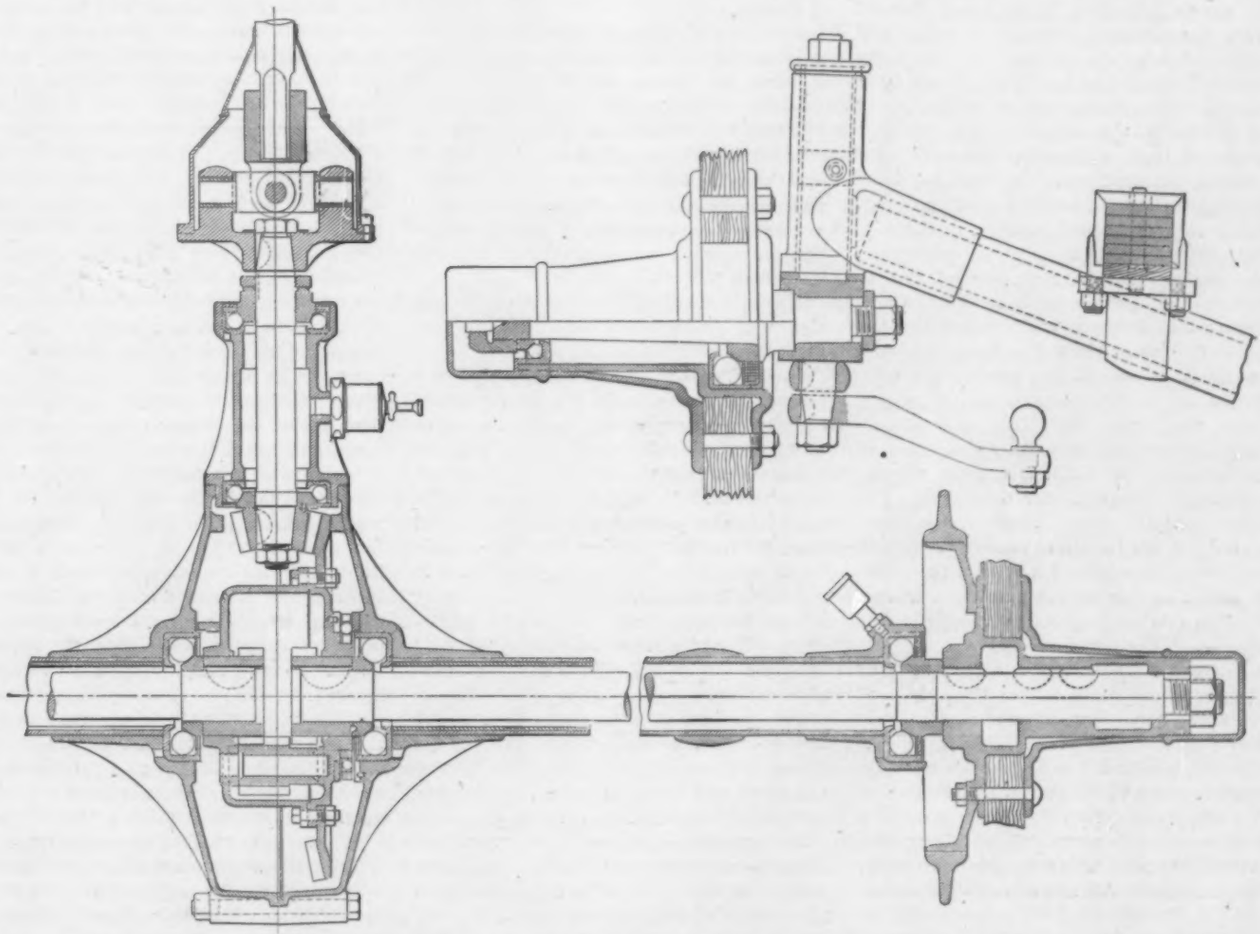
The brake horse-power is obtained thus (x being the multiplication sign):

$$\frac{\text{Net weight} \times \text{circumference of rope in feet} \times N}{33.000}$$

In testing the four cylinder engine, after several days' running under load, the following result was eventually obtained: gross, weight 175 pounds; pull on spring balance, 32 pounds, giving a net weight of 143 pounds. The circumference of the rope was 4 feet and the revolution per minute, 1633. This gives 28.3 brake horsepower which was the highest obtained, although the engine easily carried 26 and 24 horsepower during the latter part of the test. The latter power the engine would develop for quite a long time at a stretch, the same load being carried as above, but the speed slackened to 1,400 revolutions.



SECTION AND SIDE VIEW SHOWING BRAKE ATTACHMENT ON REAR WHEELS.



UNIVERSAL JOINT ON MAIN SHAFT, DIFFERENTIAL, BEVEL GEAR AND REAR HUB CONSTRUCTION—ALSO: FRONT HUB, STEERING KNUCKLE AND PART OF ARCHED FRONT AXLE.

Legal Rights and Liabilities.

What Automobile Owners and Drivers May or May Not Do—With Some Special Reference to Massachusetts.

BY CHARLES C. BARTON, JR., OF THE SUFFOLK BAR.

The word "automobile" has as yet scarcely entered the field of legal investigation and it follows, therefore, that the rules governing the rights and liabilities of the automobile owner must be deduced from the rules laid down in the past, by which are judged the actions of owners of other vehicles already in use.

PURCHASE AND SALE.

The first consideration that we come to is that of the seller and purchaser. The statutes say that no contract for the sale of goods, wares or merchandise for the price of $50 or more shall be valid unless there is a partial payment, or a note or memorandum in writing of the bargain is made and signed by the party to be charged thereby or his agent duly authorized. This, however, does not mean that a contract for purchase and sale must be in writing, signed by both parties, or that there must be a partial payment in every such contract to make the same valid. It means just this, that if any dispute over the contract arises and no partial payment has been made that the party whom it sought to hold liable must have signed some memorandum setting forth substantially the terms of the contract. Suppose that a prospective buyer has ordered a machine. Getting tired of waiting for the same and finding an opportunity of purchasing another, or deciding that he will stick to a horse, he notifies the maker that he has decided not to purchase or declines to take the machine when it is finished, what rights has the dealer? Unless there has been a partial payment or unless the prospective purchaser has put his name to a paper setting forth the price, the kind of machine, terms of payment and other conditions of the contract the dealer is without remedy to compel the purchaser to accept. The converse is also true. The dealer is under no liability for failure to furnish a machine unless he has received a partial payment, or unless he has set his hand to a memorandum setting forth in substantial terms his part of the agreement.

There is a distinction between contracts of sale, which come within the rule, and contracts for labor to which this rule would not apply. Where the article is one which a person is habitually making, it is a contract of sale, but where the article is made pursuant to the agreement, of a form and combination different from that habitually made, it is a contract for labor. For example:—An inventive, mechanical-minded, prospective autoist has a scheme for a new machine. He takes his plans to a manufacturer, enters into a verbal contract with him to build the machine in accordance with those plans. No part payment or memorandum in writing is necessary to enable these two to engage in litigation over the terms of their contract.

WARRANTY.

I assume that there are few if any express warranties given by maunfacturers as to what their machines will do, either in the way of speed or endurance. Certainly there is no implied warranty of such. A warranty is an agreement in the nature of a condition that the article will come up to a certain standard, and the measure of damages for breach of warranty is the difference between the actual value at the time of purchase and the value of the article if it had been as warranted. The damages recoverable under a warranty that a motorcycle will make sixty miles an hour, but which only makes thirty, are the difference between the value of the machine as it is and as it would have been if as warranted

LIABILITY OF OWNER FOR NEGLIGENCE.

If an automobile owner dreads anything, it must be the danger of injury by his machine to person or property. If the pleasure of an afternoon spin through the country is not marred by prancing horses and upset loads, it may be by finding some day an attachment on your real estate, or a keeper in your place of business necessitating a quick run to a surety company for bonds

Negligence—a failure to regard the rights of one's fellowmen. This is the disturbing element.

Negligence—whether one has acted as a reasonable and prudent person would ordinarily act under the circumstances, or one has done that which under the circumstances a reasonable person would not have done. A steam carriage emits steam and in passing scares a horse, and damage results. Ordinarily there is no legal negligence here. A chauffeur in passing a horse unnecessarily and in sport sounds his gong, and the horse is frightened. Would a reasonable man do this? It appears that our standard is a reasonable fictitious person whose only mistake often consists in intrusting himself for interpretation to the average jury of his peers. In other words, the jury fix the standard and then measure the offender according to that standard.

Automobiles have become a fixture and have the same general rights on our streets as any vehicle. We must adapt ourselves to them and not try to adapt them to past standards, though it may necessitate subways under the street and the use of "Shank's mares" in the country roads instead of Farmer Jones' old Black Bess.

The duty, then, is to exercise reasonable care and prudence depending upon the danger; to so conduct oneself or use one's property as not to be likely to injure others. To drive on the wrong side of the road at night without lights, to turn a corner sharply without sounding a gong, to go at an excessive speed through a crowded street, to leave a powerful machine with the motor in motion on a street without an attendant, would all be some evidence, though not controlling, of negligence. This list might be continued *ad infinitum* but to little purpose, bearing in mind that the only test is the action of a reasonable and prudent man. In passing, it should be said that in Massachusetts the fact that a person is violating a statute or ordinance, such as the speed limit law, is not conclusive evidence of negligence but merely one fact to be taken into consideration by the jury in passing on the question of negligence. Let us pass on and assume that the jury have found the defendant guilty of negligence. To what extent will the defendant be held to answer? Clearly only for those injuries which are the natural and proximate result, the probable consequences of the negligence.

An automobile negligently runs into the rear of a wagon. At a moment previous to the contact the hold-back has broken and the whiffletree coming against the horse causes him to run away and demolish the wagon. Can it be said which of these two occurrences was the proximate cause of the accident? No; because both of them concurred to produce the effect and it cannot be determined which contributed more largely. But if the hold-back had been broken by the contact and the whiffle-tree pressed on to the horse and the horse therefore ran away, doing damage, clearly in this case the contact of the machine was the proximate cause of the injury

An automobile strikes a team and demolishes the wagon; the horse runs away and knocks down a pedestrian who is walking on the sidewalk. Indisputably the owner is liable for injuries to the wagon. Why is he also not responsible for the mischief done by the horse in its flight? By his fault the owner started the horse in uncontrollable flight through the streets. As a natural consequence it was obviously probable that the animal might run over and injure persons traveling in the vicinity. The consequences are not, therefore, remote or unexpected, and the pedestrian's case falls clearly within the rule already stated as to the liability of one guilty of negligence for the consequential damages resulting therefrom.

NEGLIGENCE OF THIRD PARTY

That the negligence of a third party contributed to the accident will not avail the defendant if he were himself guilty of negligence.

For example: The defendant is guilty

of negligence in driving his machine at an excessive rate of speed at night along a narrow road. He comes upon a horse and team negligently allowed, by its owner, to roam in the highway. He turns out to escape the horse and wagon and, not having control over his machine, runs into a person walking on the path beside the road. The fact that the accident would not have happened if the horse and wagon had not been allowed to wander in the road will not excuse the defendant. He should have foreseen that the result of his reckless driving might have been just such an accident as subsequently occurred. Further than this, the fact that injuries have been aggravated by the unskilful treatment of a surgeon, physician, or nurse will not relieve the guilty person, and he will be liable for all the damage sustained by the injured person

This does not mean, however, that where a curious and inter-meddling bystander, just to see what happens, so meddles with a machine which has been left in repose in a proper manner, locked and made fast as provided in the statute, standing on the side of a street, and the machine runs away inflicting damage on some person, that the owner will be liable. Far from it, because there has been no negligent act on the part of the owner, the independent illegal act of the bystander being one which he could not reasonably have anticipated. In this case the independent illegal act is the cause of the injury. If, however, the carriage had been left with the motor revolving without any lock, key or other device to prevent its being set in motion, and subject to motion only by the touching of some one lever, the result might be different, provided the occurrence of the act of the bystander might have been reasonably expected.

CONTRIBUTORY NEGLIGENCE.

That the act of the person injured was the proximate cause and contributed to the injury, is always a defense, because the law cannot determine how much of the injury is attributable to the plaintiff's own fault.

Take the illustration given above. If the bystander had intermeddled with the machine left in a proper manner on the side of the street, had set it in motion, and been injured thereby he could not recover because his act was the proximate cause of the injury sustained by him. The injury would not have happened had the plaintiff been free from fault at the time of injury.

That a person, in full view of an approaching automobile, proceeding at a proper speed, should attempt to cross in front of the same; that a team should cross from one side of the road to the other in front of an approaching machine which was sounding its gong; that a boy should jump on the rear step of a touring car; would be further examples of contributory negligence, there being in each of these cases a want of ordinary care on the part of the person injured. In every damage suit the plaintiff must prove that he was in the exercise of ordinary care.

Cases have been decided in our courts that where a person in anticipation of a collision between two cars and overcome by fear, jumps from a car and is injured, that this is not contributory negligence. This would likewise apply to the subject under discussion

ACTION FOR DEATH OR INJURIES

At the common law no action was maintainable for the death of a person, but by various statutes enacted in Massachusetts during the past twenty-five years, and now compiled in the Revised Laws, persons or corporations, by their negligence or that of their agents while engaged in their business, causing the death of a person being in the exercise of due care and not in their employ, shall be liable in damages in a sum not less than $500 nor more than $5,000.

This may be in addition to a claim for damages for personal injuries and suffering, which subsequently resulted in death. So that representatives of a deceased person, who has been injured and subsequently died, may recover for his injuries sustained in a sum not limited by statute, and also for his death in a sum not exceeding $5,000.

It will be seen, therefore, that the liability may be less in a case of instantaneous death, than where there has been conscious suffering followed by death and in some cases less than where there have been injuries sustained not resulting in death. It will be noticed that employers are excluded from the benefits of this statute because there are other provisions made for their injuries.

I have been able to find but one reported case in regard to injuries inflicted by an automobile.

"Thies *vs.* Thomas, 77 New York Supplement, 276, was an action brought by the administrator of a boy between the age of six and seven years old, who was killed by an automobile while playing on the street The Court in instructing the jury said: "Playing on the street is not of itself contributory negligence if the automobile came upon the deceased under such circumstances as to produce, and did in fact, produce fright or terror, and this caused an error of judgment by which the boy ran in front of the automobile, it was not contributory negligence. It is claimed by the plaintiff that the automobile was run at an excessive speed. An automobile is a vehicle of quite recent times, carrying its motive power within itself, but as such, it has the same duties to perform as other vehicles when meeting pedestrians. No owner or operative of an automobile is, therefore, exempt from liability for collisions in a public street by simply showing that at the time of the accident he was not running at excessive speed. He still remains bound to anticipate that he may meet persons at any point in a public street and must keep a proper lookout for them, and keep his machine under such control as will enable him to avoid a collision. If necessary, he must slow up and even stop. No blowing of a horn or whistle, without an attempt to slow up, is sufficient if the circumstances demand that the speed should be slackened or the machine stopped." In this case the jury assessed damages for the death of the boy at $3,125.

(To Be Continued.)

REPRESSION OF RECKLESS DRIVING A FACTOR IN ROAD IMPROVEMENT.

The improvement of the country roads is now recognized as one of the greatest questions before the American public; and it is coming to be recognized as a question which concerns not merely the rural population, but the whole people. Many public men have declared their conviction that road improvement is a proper subject for National as well as State legislation. Among the reasons offered in support of this view are the following:

FIRST.—The improvement of the highways is too great a burden for the rural population to bear alone. If left to them, the problem will never be solved.

SECOND.—The improvement of the roads would benefit all classes throughout the entire country; hence, the whole people should share in the necessary expense.

THIRD.—The improvement of the roads is necessary to the extension of the rural free delivery system; and Congress is authorized by the Constitution to "establish post-roads."

FOURTH.—The improvement of the roads is certainly as fit a subject for National legislation as improvement of rivers and harbors.

Bills are now before both houses of Congress providing for an appropriation of $24,000,000 to be used during the next three years as a fund for National aid to road improvement. The fate of these bills depends largely upon the attitude of the farmers on the question. If they would unite in a strong demand for National aid, it would speedily become an accomplished fact. The more courteous the treatment they receive from the drivers of automobiles, and the less fast driving that is done by motorists on the improved roads, the more likely will be the farmer to ask for good roads, which they know attract automobilists and bicyclists.

Tax Commissioner Fleming of Omaha, Neb., has assessed all the automobiles in Omaha that he knows anything about, rating touring cars at $1,000 and other sizes proportionately. On the basis of $1,000 assessment, the tax to be paid annually will be from $11 to $12. The owners of small runabouts will pay from $2.50 to $3.

Some 1904 French Carbureters.

By ED. VRARD, in *La Vie Automobile*.

Real efforts have been made this year for the improvement of carbureters. I will begin with the most original types exhibited at the Paris show.

Double De Dion-Bouton Carbureter.

The De Dion-Bouton twin-cylinder motors are built with connecting rods at 180 degrees. This disposal permits a more perfect balance of the different parts and nearly does away with all vibration, but makes it impossible to have the cylinders fire at equal intervals.

Let us imagine, for instance, that the forward cylinder has just fired, which it does every second revolution of the motor, the second cylinder cannot fire, as would be desirable, one revolution later, as its piston is then at its lowest stroke. The spark must, therefore, act half a turn or one turn and a half later.

This being well understood, it is nothing extraordinary that the many trials made by the de Dion-Bouton works have shown that the full strength of a twin-cylinder motor was less when a single-feeding carbureter was used, notwithstanding the different dispositions adopted in fitting the inlet pipes, than if each cylinder had its own carbureter.

Owing to the unequal suction intervals, the two cylinders work perforce under different conditions; at the end of the suction of the first cylinder, just at the moment the inlet valve shuts, a backstoke is produced which hinders for an instant the second cylinder's aspiration.

This is why the first two-cylinder De Dion-Bouton cars were sold with two carbureters.

Although absolutely justified, this solution was far from being "pretty": to-day, it is done away with. The carbureter I am now about to describe combines all the advantages of the two separate carbureters and avoids the small errors due to differences in the adjustment of two floats.

The feed is the same as in the one-cylinder type; an upright tube in which works a needle valve. The float which acts on this in the usual manner, is of the annular type, just the same as for one cylinder, so that the different inclines the carbureter is called to follow when fixed in a car have no great influence on the level in the two feeds, these being very close to one another and as near as possible to the vertical angle of the float.

The air mixing is produced by two different inlet pipes absolutely separate for each cylinder, but under conditions mathematically the same.

The carbureter (Fig. 1) is symetrical (except the gasoline inlet P) around the vertical axis of the apparatus. A central rod guides the two mixture-regulating boxes OO, which are formed from cylindrical brass tubes and adapted to slide vertically; their displacement under the influence of a small bell-crank in the carbureter's cap, gives the different quantities of gas and extra air admitted.

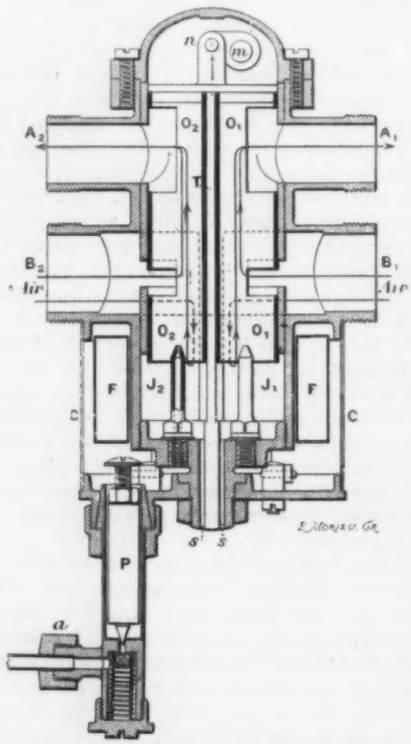


FIG. 1.—DE DION DOUBLE CARBURETERS.

A_1 A_2, Suction openings.—B_1 B_2, Air openings.—O_1 O_2, Regulating boxes.—T, Central piece dividing the two regulating boxes.—*n m*, Lever acting on the regulating boxes.—F, Float (annular.)—C, Carbureter body.—J_1 J_2, Gasoline Nozzles.—P, Needle Valve.—S S, Outlet for overflow of gasoline.

When starting, these two boxes are at their lowest, fresh air rushes in through the annular openings made in the body of the carbureter; then, as the slide windows are shut, passes entirely by the lower openings of the boxes and rises to the inlet pipes A_1 and A_2.

As soon as the motor has started, the sliding boxes are raised sufficiently to obtain the best mixing of the gas, the slide windows B_1 and B_2 supplying more or less of neutral fresh air according to the position of the sliding boxes.

The top openings always allow for the gas a passage equal in diameter to that of the pipes A_1 and A_2.

The working conditions thus remain identical at any moment for the two cylinders and the difficulty referred to above has been removed. The carbureter contains, in the most simple mechanism and in very compect form, the elements of two carbureters.

The Rossel Carbureter.

This carbureter is certainly one of the simplest and lightest actually existing. Air rushes in by opening D (Fig. 2.) and gasoline by the feeding tube j, the opening of which is set once for all according to the motor.

The exact quantity of air admitted, and which varies according to the speed of the motor, is regulated by the disk A, of a special form, which, adjusted on the same horizontal rod as the disk B, points of additional air coming in, from E when the disk B admits a larger quantity of gas. The rod AB is acted directly upon by the regulator. The carbureter of this system cannot easily get out of order. The two disks move together in openings. The section of which has been experimentally established with a view to realizing the three following combinations:

1. Full Strength.—The two windows are open in proportions so that the best mixing is obtained.

2. Slowed Down.—(For instance when the car is stopped)—The air opening is shut. The gas opening just lets through the necessary quantity for the motor not to stop. The gas is at the same time very rich and admitted in a very small quantity. Very feeble but continuous explosions are thus obtained.

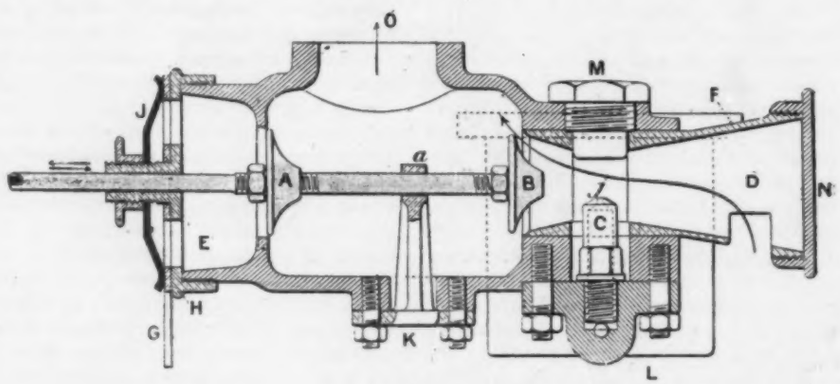


FIG. 2.—ROSSEL CARBURETER.

A B, Throttling and Regulating Valves.—C, Gasoline nozzle.—D, Heated air.—E, Additional air.—F, Diffusing chamber.—G, Flat mixture-adjustment plate.—H, Guide plug for rod *A B*.—J, Adjustment plate spring.—K, Supporting guide for *A B*.—L, Float (behind the plane of the cross section.)—M, Examination plug.—O, Gas outlet motor.

3. To Stop.—The disk *B* shuts completely; that for fresh air opens a little, so as to have no depression in the cylinders (unavoidable when every opening is shut) which would suck up the oil under the pistons and would then dirty the sparking points.

THE DELAHAYE CARBURETER.

This carbureter is based on a different principle. It is mechanically automatic, but has no additional air inlets.

In this carbureter, air is aspired

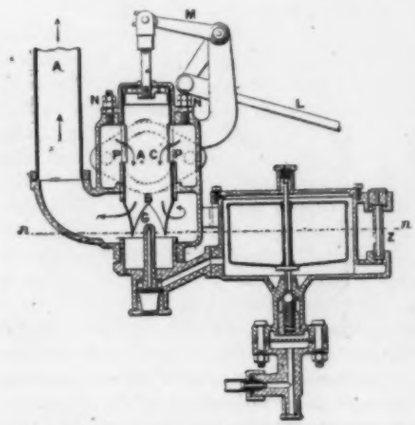


FIG. 3.—DELAHAYE'S CARBURETER.

A, Suction tube to the motor. Gasoline level. *B*, Cylindrical slide-valve of special form at the bottom, acted on through the levers *L* and *M*, by the regulator, and perforated at *P P* with different openings coinciding with those of the central pipe. *A C*, Hot air suction. *N N*, Initial regulating plate. *G*, Gasoline inlet.

"hot" (through a special pipe cast in the cylinder), and through a single opening. But it rushes in by two regulated apertures, into a central pipe. In going down this pipe it meets and pulverizes the gasoline gush coming from *G*, Fig. 3, in the opposite way, then goes through the strangling openings of a slide-valve contained in this pipe, to go to the motor. At the inlet opening a small butterfly valve is placed, which shuts when the starting handle is moved, and thus produces, automatically, a flow of gasoline, without obliging the chauffeur to flood the carbureter, as is ordinarily done.

The slide-valve in the central pipe regulates the section of air inlet and at the same time the section of gas inlet to the motor. As only hot air is admitted, the gas produced is not influenced by the hygrometric state of the atmosphere. The Delahaye carbureter is, as may be seen, original in its theory; it is strong and most regular in its working.

Everybody who had an automobile took part in the Tournament of Roses on New Year's Day at Pasadena and the machines there could be counted by the hundred.

If all the first automobiles ever built were sent to the St. Louis exposition it would be necessary to add more territory to the fair grounds.—*Detroit (Mich.) Tribune.*

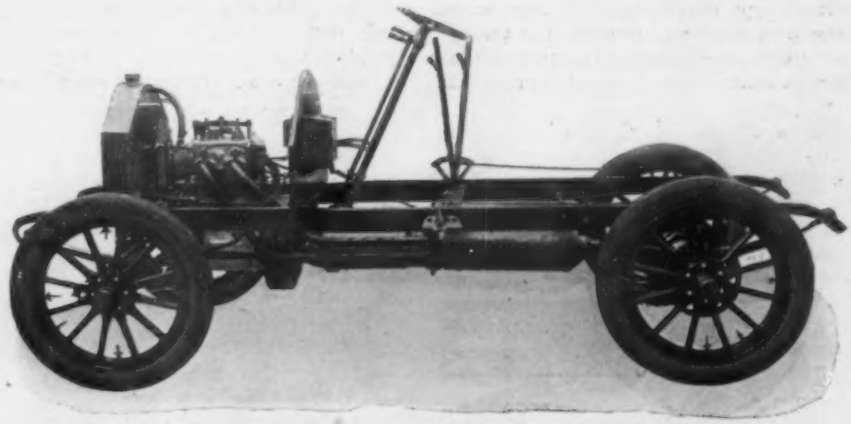
The Royal Tourist Cars.

The new Royal Tourist car made by the Royal Motor Car Company, of Cleveland, successor to the Hoffman Automobile and Manufacturing Company, is equipped with a 16-horsepower two cylinder motor placed vertically in front. The motor has a maximum speed of 1,300 revolutions and can be throttled down to 250 revolutions. A governor acting directly upon the throttle keeps the speed of the engine uniform normally. The crankcase is of aluminum. The intake valves work automatically and are accessible by simply removing three nuts and loosening a joint on the intake pipe. An improved cone clutch is used, with a universal connection between it and the transmission case. The transmission is of the three-speed clash gear type, enclosed in a dust-proof and oil-tight aluminum case and drives direct on the high speed. Drive is by jointed shaft to bevel gear on the differential on the rear axle, which is of very rigid construction and fitted with roller bearings. Large brake drums are attached to the hubs of the rear wheels, and the brake lever at the side of the seat automatically releases the clutch when the brakes are set. A foot-operated brake is placed on the transmission at the rear of the gear case. The clutch is also thrown out when this brake is set. The gear shifting levers are also arranged to throw out the clutch automatically. The front wheels run on roller bearings and are turned by a substantial steering gear of the wheel type.

not only the motor bearings but the cranks and transmission gears. The radiator is of the cellular type, supplied with a fan attachment, with which a water tank and its piping is unnecessary. The gasoline tank has a capacity of fifteen gallons and is placed under the front seat.

The body is a modified form of the King of the Belgians type and is made entirely of aluminum. It has divided front seats and the tonneau will accommodate three passengers comfortably. All seats have high backs and are luxuriously upholstered in hand buffed or enameled leather. The finish of the car, with the exception of the wheels, is hard baked enamel, which gives a handsome hard finish that will stand long hard usage. The hood is of Mercedes pattern, with oval top and hinged top doors. The car weighs 1,750 pounds. It will list at $2,300, which will include a full equipment of gas and oil lamps, long tube horns and set of tools. With a canopy top and set of baskets, the price will be $2,500.

The Royal Motor Car Company will also manufacture a 32-horsepower car whose chassis will be an exact duplicate of that of the two cylinder car, except that two double cylinder motors will be mounted on an extended aluminum crankcase. All parts, including the transmission and axles, will be interchangeable on the two and four cylinder cars. Aluminum castings are used as far as possible in the construction of both cars. A full King of Belgians aluminum body will be furnished on the four cylinder car if desired



CHASSIS OF ROYAL TOURIST, 16-HORSEPOWER, CAR

The frame of the Royal Tourist is of pressed steel, made from polished cold rolled stock, and is mounted on long two-inch springs, front and back. All wheels are thirty-four inches in diameter and are fitted with 3 1-2-inch detachable tires. The wheelbase is ninety inches, and the tread standard width. The spark regulator and throttle control levers are on the steering column. The spark coils and force-feed oiler are on the dash. The latter is a positive oiling device, supplying

giving a capacity for six passengers. The 32-horsepower car will weigh less than 2,000 pounds and will list, with full equipment, at $3,000.

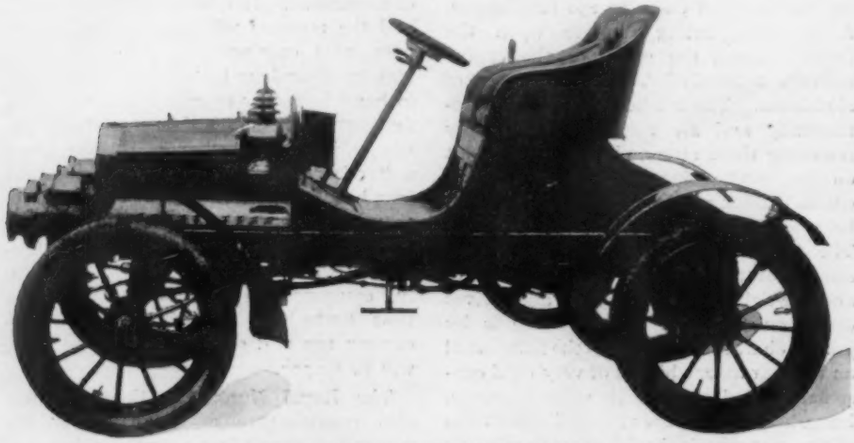
Superior Runabout from Superior Region.

A new gasoline runabout having modern features and some improvements is nearing completion at the Hodge Iron Works in Hancock, Houghton County, Mich. It is to be known as the La Pointe

Simplex. It is built upon designs by N. M. Benson and C. J. Costelle of Chicago, after experimental work in Chicago covering a period of two years, and Charles J. Hodge and other local capitalists are interested.

Work was started on the machine in Hancock about November 1, and it was expected that the sample vehicle would be ready for inspection and use by the first of the new year. All but a few pieces of the machinery have been made in the Hodge foundry, and should the items of cost, labor and facilities prove satisfactory, it is the intention to proceed with the manufacture of the machines there.

The following details of the construction were given by Mr. Costelle to the Houghton *Mining Gazette*. The motor is of vertical French type, developing eight horsepower, placed in front and transmitting through a three-speed sliding gear transmission by flexible shaft to bevel gear on the rear axle. The engine turns 1,800 revolutions per minute and the gear ratio is 4 1-2 to one of the wheels. The speed range is from 1 1-2 to 35 miles an hour. Automatic speed changing devices prevent the possibility of stripping change speed or bevel gears. The engine has an automatic throttle. The car is controlled by three small levers on the steering column and the engine is disconnected from the clutch and the internal expanding brakes set by a foot pedal. The radiator is cellular. An automatic oiler, governed by the engine, is located on the dash. The wheels are of artillery type, fitted with 28x3-inch detachable tires. Complete, the car weighs about 900 pounds.



NEW STYLE OLDSMOBILE RUNABOUT—A NEW YORK SHOW SURPRISE.

If it is true that there were 11,000 automobiles sold in this country last year, they have not lived up to their reputation. Certainly they have lacked far more than one victim apiece.—*Tacoma (Wash.) Ledger.*

Pope-Hartford Light Car.

This is a new model, single-cylinder, 10-horsepower, gasoline runabout just placed on the market by the Pope Motor Car Company. It is especially designed for those who want a moderate priced gasoline car for everyday use, is up-to-date in construction and has some interesting new features.

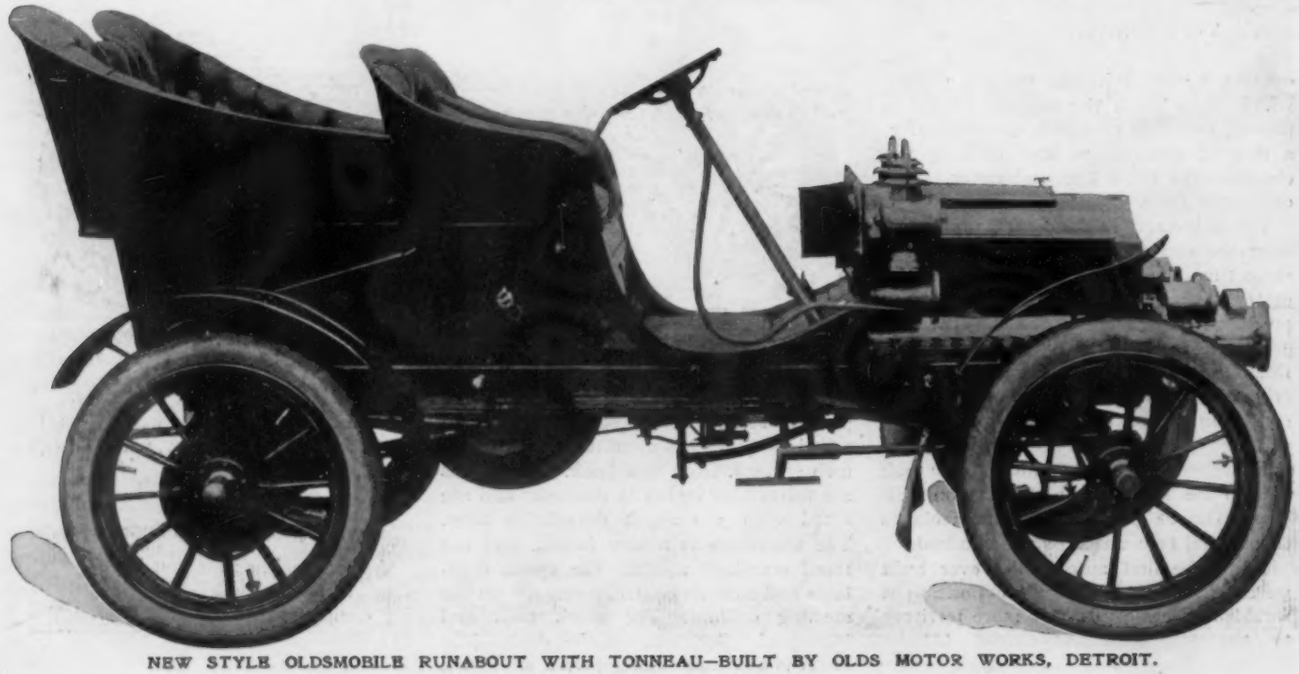
The motor is of the horizontal type and is placed in the back of the body, where it is readily accessible from above when the tonneau is removed.

Every bearing, moving part, or nut which is not fastened by riveting, has in addition to its locknuts or lock-washers a split key. Drop forgings are used extensively in the framework and general construction of the car. All the piping connections on the water circulating line are made with flexible rubber joints, reducing the possibility of leakage or breakage and allowing the necessary flexibility in the framework and running gear when the car travels over uneven roads.

In emergency the high speed gear can be thrown out and the reverse gear thrown in by the side lever control without passing through intermediate gears, the transmission being strongly built to withstand this strain.

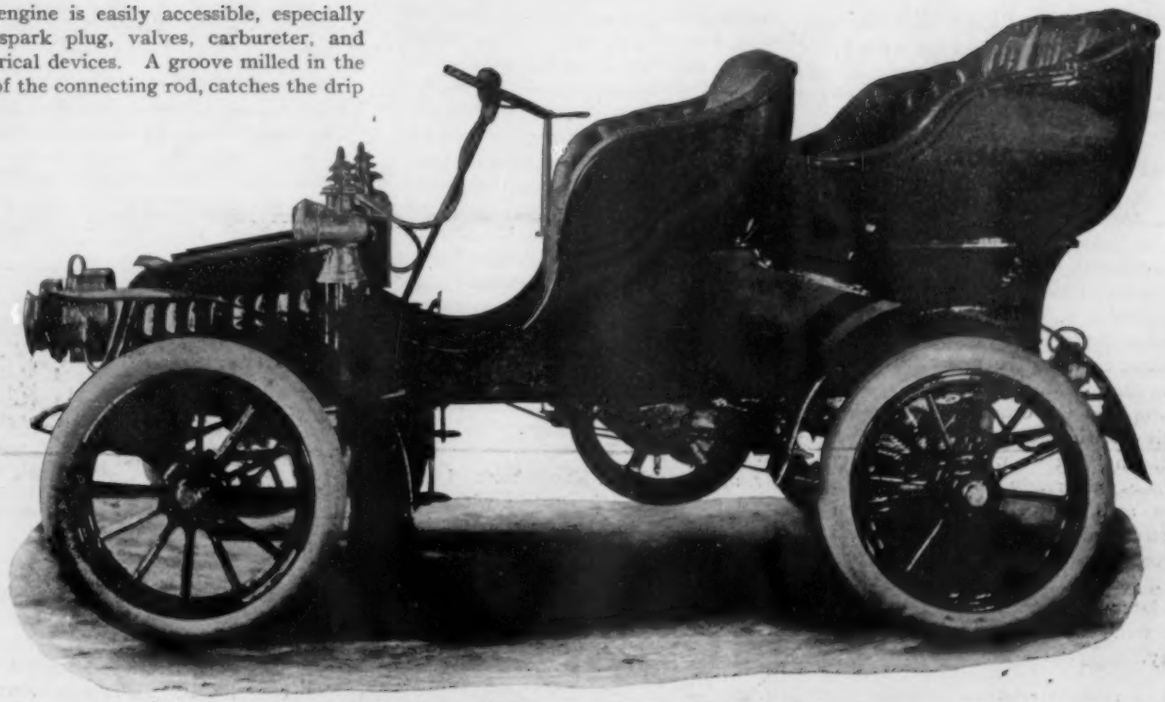
An irreversible steering check that prevents all back lash in the steering mechanism is fitted and prevents the front wheels from being deflected by obstructions or roughness of the road. Another feature is a tilting steering post pivoted at the footboard to permit easy egress and ingress of the operator.

All operating foot levers are provided with ratchets so they can be set readily at the will of the operator. Every part of



NEW STYLE OLDSMOBILE RUNABOUT WITH TONNEAU—BUILT BY OLDS MOTOR WORKS, DETROIT.

the engine is easily accessible, especially the spark plug, valves, carbureter, and electrical devices. A groove milled in the top of the connecting rod, catches the drip



POPE MOTOR CAR CO.'S NEW 10-HP. SINGLE-CYLINDER "HARTFORD" CAR.

from the oil feed cups and conveys it to the crank bearing or the wrist pin bearing, according to the tilt of the car. The main engine bearings, connecting rod and crank bearing, wrist pin bearings and other moving parts of the engine are made from the best phosphor-bronze and are all adjustable for wear.

Both the intake and exhaust valves can be reached and taken out in one piece with its accompanying mechanism for cleaning or otherwise. The intake valve is automatic and the exhaust valve mechanically operated.

A plug and double switch on the dashboard permits the car to be rendered inoperative when left standing by the owner.

The spark plug is similar to the breech lock of the modern rapid fire gun. The blow of a wrench or hammer will loosen it, and by giving it one-quarter turn it can be removed or replaced without difficulty.

The engine exhausts into a receiver which takes the first shock of the exhaust, and from there, the latter finds its way gradually into the muffler and is dispersed into the atmosphere with a minimum of noise.

The car has a long wheelbase and low-hung body, insuring stability and comfort in riding.

The tonneau body on the Model B is exceptionally roomy and elegant and is lined at bottom and sides with carpet, leather bound.

The Pope-Hartford car has attached to the bottom of the gasoline tank a cup which holds enough to run the car a considerable distance and prevents stoppage of the motor on grades and slopes when the fuel has got low as the oil cannot all run to one end or side of the tank. The gasoline tank also has a drain cock that permits easy compliance with the insurance regulations that in some places require the tanks to be drained off at night.

THE KNOX 2-CYLINDER "TUDOR" TOURING CAR, Latest Product of the Knox Automobile Co., Springfield, Mass.

AUTOMOBILES IN FLOWERS AT PASADENA TOURNAMENT.

Southern California Motorists Turn Out in Numbers for Grand Display of Decorations—Toilettes, Cars and Flowers.

IDEAS FOR DECORATIVE PURPOSES ELSEWHERE

MOTTO: *Oh, pays des roses!*
Oh, pays d'amour! &c.

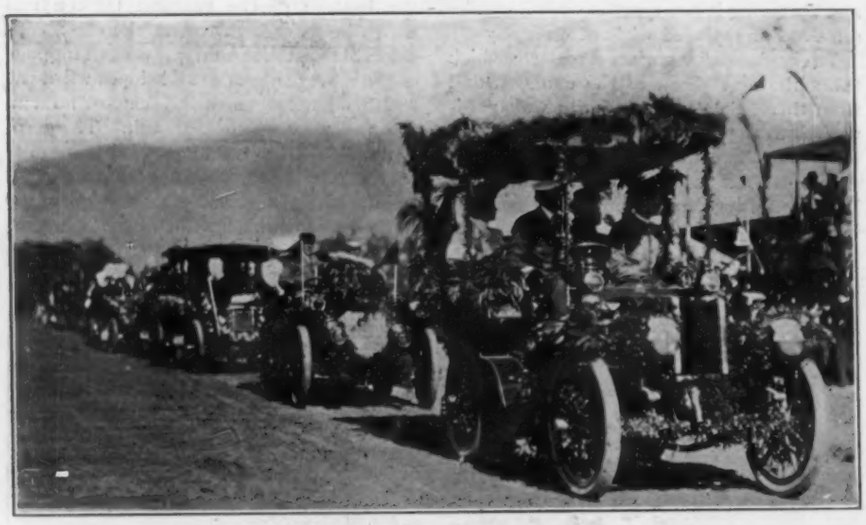
The far-famed annual Tournament of Roses, held in Pasadena on New Year's Day was superb, prodigal in surprises and lavish with pleasing features. Millions of blossoms, covering the many turnouts, flamed in the midwinter sunlight.

The people of the Crown of the Valley were astir early in the morning, and many little finishing touches were made before the parade was ready to start. From buildings and poles in the downtown streets streamed banners and decorations in gorgeous display. The parade was scheduled for 10 o'clock, but it was forty minutes later before the beautiful pageant began to wend its way through the beautiful valley.

THE AUTOMOBILE SECTION.

The Pasadena Automobile Club, still adhering to its standard of "doing things," won the palm by its splendid display and generous hospitality to the automobilists from Los Angeles.

Mrs. G. L. Huggins of Haslet, N. J., accompanied by Miss Bertha Stockwell, of Brooklyn, made a great hit with her car bedecked with blood-red poinsettias.



PASSING THROUGH THE CROWN OF THE VALLEY.

Mrs. W. H. Learned, Jr., who is a guest of the Maryland, from Cambridge, Mass., entered an automobile enveloped in golden-hearted daisies. The framework was outlined in smilax and over the back were arches of marguerites and smilax. On the top was a crown of white daisies, emblematic of the Crown of the Valley. Mrs. Learned and Mrs. D. M. Linnard occupied the vehicle, gowned in all-white and with white parasols.

One of the most popular machines was that of Charles B. Scoville of Pasadena. Bursts of applause greeted it on all sides. It was decorated in poinsettias, and Mrs. Scoville and Miss Marion Towne, also little Miss Barbara Scoville wore cardinal-trimmed hats and gowns of white.

A facsimile of the Pasadena Automobile Club's button was done in pink carnations on a smilax background on the front of H. C. Merritt's Mercedes car. Twelve dozen carnations were used in making the monogram. Mr. and Mrs. Merritt and their two children were in the car.

Barton Dwight's touring car was occupied by Mr. and Mrs. Dwight, Mrs. Harvey and Miss Harvey. It was decorated in smilax, white blossoms and white satin ribbons.

Mr. and Mrs. H. J. Macomber and their little son were in their electric, which was prettily decorated in half-blown American Beauty roses and smilax.

Roy Macomber, and Miss Angie Holmes who was gowned in pale yellow, set off with a black picture hat and black parasol, were in an electric, which was covered with yellow bignonia blossoms, entwined with smilax.

In an automobile decorated with red and white carnations and smilax, rode Mr. Lloyd Macy and Miss Louise Hazelhurst. Miss Harelhurst wore a white gown and straw hat, trimmed with red silk poppies.

Roses and white carnations covered the auto of H. M. Ziers, in which were Benton Bradshaw, Roy Mosteller and Mr. Ziers.

Mr. and Mrs. F. A. Babcock of Buffalo, who are winter visitors in Pasadena, entered the same electric car in which they traveled from Buffalo over Boston to New York last fall. Simple decorations were carried out in smilax and other blossoms

In a little Holley runabout were George Hoxey and Neal Hotaling. It was done in green stuffs and red geraniums.

R. J. Perew, who had his tonneau filled with little waifs from Pasadena Training School, had his machine trimmed with bright red holly berries.

Three machines were entered by A. K. Macomber. His touring car was decorated with Chinese lilies and asparagus plumosus, 200 dozen blossoms being used. Mrs. Kendall, Miss Coyne and Mrs. G. W. Young rode in it. In the White stanhope was Mayor Vedder and Mr Macomber. It was trimmed with smilax and magenta geraniums.

IN THE STREETS OF PASADENA.

Tod Ford's car was gorgeous in crimson geraniums and smilax, a red canopy completely covering it. In it were Freeman Ford, Alfred Swinnerton, Edward Behlow and C. Guyer.

In his car, decorated with smilax and bougainvillea, H. T. Kendall had his two children, Charles and Frances, with two little friends.

Tracy C. Drake's Autocar was beautifully decorated in red carnations and smilax, making a very pretty effect.

In a machine done entirely in white callas, were Mr. and Mrs. Walter Morrow.

LOS ANGELES AUTOS IN LINE.

In the Los Angeles division were Mr. and Mrs. Frank A. Garbutt and family in a White touring car trimmed with smilax; Fred W. Flint, Jr., and Bob Flint in a Stevens-Duryea, decorated with smilax; C. E. Crary and wife in their machine; Mr. and Mrs. William Bayly, Jr., B. L. Harding and Charles Bayly in a White car, smilax trimmed; N. O. Bagge and Judge M. L. Graff in a 1904 Packard done in smilax; Lester Robinson and B. H. Smith; Homer Laughlin and Mrs. Laughlin, Miss Gwendolyn Laughlin and Miss Edith Maurice.

Boston Y. M. C. A. Motoring Course.

Lectures on gasoline motor vehicle construction in the Boston Y. M. C A. course were commenced January 5. by Albert L. Clough. The first lecture dealt with the elementary principles of gasoline motors and added nothing to the information given in every textbook on the subject. The second lecture on January 12, dealt in a similar general way with some of the requirements in the design of cars propelled by gasoline motors.

Over 8,500 automobiles were licensed in the state of New York up to January first.

JOURNALISTIC EXCURSION TO CLEVELAND FACTORY.

Trips from New York and Chicago Organized by Winton Motor Carriage Co. and Banquet Tendered.

SHOP WORK INSPECTED AND EXPLAINED.

With characteristic enterprise and liberality, the Winton Motor Carriage Company conducted representatives of the leading dailies and trade papers East and West to Cleveland last Saturday for an inspection of its new plant, gave them a banquet at the Hollenden and returned them home again with a large credit to their happy day's account and a fair increase in their knowledge of automobile construction.

The Eastern party, consisting of representatives of the *Motor World*, *Motor Age*, *Auto Life*, *Motor*, *Topics*, THE AUTOMOBILE, the New York *Herald*, *World*, *Sun*, *Tribune*, *American*, *Mail and Express*, *Commercial Advertiser*, *The Boston Herald*, *Transcript*, *Advertiser*, The Philadelphia *Public Ledger*, *Record*, was in charge of Mr. Percy Owen, assisted by other eastern representatives of the Winton company.

The party left New York at 5:35 Friday afternoon in a special Pullman to which had been added an elaborate commissary department. Soon after starting, the guests were served in a dining car, reserved for their exclusive enjoyment, and the pleasures of automobiling, as well as the journalistic habit of scoops and contracts, were eclipsed by the good fellowship which always responds to the right dinner at the right time; all men were created hungry. After some discussion as to the occupancy of No. 7 in which possession scored 100, the company retired in peace and harmony. By the fortunate change of time at Buffalo, the starters were given a handicap of one hour to get the slumbering guests ready for the dining-car at Ashtabula, but everybody had breakfasted and donned a clean collar in time to greet Mr. Shanks at the Cleveland depot.

The car was then run out to the factory and after a brief skirmish for place in the official photograph, the party was conducted to the private office of the sales-manager, and presented individually and collectively to the officers and managers of the Winton Company. Here the party was augmented by representatives of the Chicago and local press and the factory and its product was turned over to the guests for inspection. Many profound and some picturesque questions were asked as the party proceeded from department to department, all of which were answered satisfactorily, and before the inspection was finished the assumed look of discreet wisdom worn by the visitors had given place to a more confident expression of some positive imbibed knowledge of substantial automobile construction.

Every department and process of construction was exhibited, and materials and workmanship were inspected. Hundreds of cars were shown in various stages of manufacture, wood bodies were being made, motors finished and tested, and gears cut by automatic machinery. But the company were more at home with the finished product in the shipping department and the most modest and retiring did not hesitate to take driver's seats when a number of cars with the "Bullets" in the foreground were lined up for a photograph.

Returning to the office after the tour of inspection, congratulations were freely indulged on the magnitude and completeness of the plant and the quality and character of the finished product. Automobiles were now announced in readiness to convey the party to the Hollenden, but no member of the party at all familiar with the advertising in his paper failed to note the "Cheerful" sign on the door of the publicity department.

The well-loaded cars made a circuit of the testing track around the factory and through snow and slush outsped the trolley on the trip down town.

Early in the afternoon the Banquet Hall of the Hollenden was darkened and the tables formed in a hollow square and banked with roses and carnations were illuminated with candelabra. After each guest had found his plate, the celebrated automobilist and Mayor of Cleveland, Hon. Tom L. Johnson, arrived and

Kerrison, Fay, Maltby, Reeves, Brane, Hoey, Jarvis, Carr, Benson, Al. Reeves, Mears, Schwalbach, Batchelder
Marden, Owen, Spooner, Harrison, Hitchcock, Chalbourne, Fuelkk, Beis, Dudley, Shanks, McCardell, Schwartzkopf, Swinnerton, Swetland

EASTERN DAILY PAPER AND TRADE PRESS MEN AND THEIR SPECIAL CAR AT WINTON PLANT IN CLEVELAND.

the party sat down to an elaborate banquet.

Mr. E. S. Reese, president of the Cleveland Automobile Club, acted as toastmaster, and notwithstanding the sentiment expressed on the menu that:

"Of all sad words of tongue or pen
I think the saddest ones are when
Your gasoline has run its course
And small boys chorus—'Gittahorse'!"

many happy tributes were made to the originality, genius, perseverance and success of Mr. Winton and his company. After the response by Percy Owen, the company insisted upon singing "The Good Old Summer Time," and as well fed and happy a lot of newspaper men as ever were assembled adjourned to the Automobile Club Rooms in the hotel for final adieu. The party was then conducted to the depot in Winton automobiles where the special car for the eastern party was waiting, and Lake Shore Limited Fast Mail No 6 soon had them homeward bound and, as on the outward trip, special dining service was arranged for the return party and Sunday morning found them in New York with the single regret that Winton excursions did not come every Saturday.

PLANNED TO TAX AUTOS IN BUFFALO FOR USE OF STREETS.

BUFFALO, Jan. 9.—Senator Davis and Assemblyman Cox introduced a bill at Albany last Tuesday amending the charter of the city of Buffalo, at the instigation of Mayor Knight, so as to provide that a tax may be levied on automobile and other vehicles used in the city streets. The measure gives the common council power to impose and levy a tax upon the owners of automobiles as well as of all other kinds of vehicles, including public and private carriages and bicycles, "for the privilege of operating, driving or propelling the same along or upon the public streets, avenues, highways and other public places."

CANADIAN PIONEERS AND CUSTOMS RULES.

Conservatism Hindered Popularity of the Auto in Montreal Until a Year Ago, when the First Garage was Opened.

OTTAWA'S FIRST AUTOMOBILE ESTABLISHMENT.

MONTREAL, Can., Jan. 9.—The Canadian is a very conservative person, particularly in that part known as the province of Quebec. He does not take readily to new things, but when he once sees the utility of it he is ready to seize on and adopt it.

This trait accounts for the slow progress that automobiling has made here. Up to within the last twelve months there were not above a dozen machines in this district, but when the General Automobile Company of Canada was organized by A J. de B. Corriveau, interest was awakened and the daily enquiries now made augur well for the spring.

While a few people had previously bought machines, the results to them were unsatisfactory, because there was no place where repairs could be made or instructions given as to the best mode of management. To show how badly such a place was needed, as soon as the "garage" was opened by the new company, it was at once fully occupied in repairs under the superintendence of skilled French engineers and chauffeurs.

The customs regulations for the entering into Canada by American automobile tourists with their cars formerly involved a deposit of the 25 per cent. duties, but have now been readjusted so that tourists can cross the frontier by getting some responsible friend on the Canadian side to give bond that the same car will go back to the United States. These concessions were obtained through the influence of Mr. Corriveau and have enabled many Americans to invade this country and enjoy its crisp climate and scenic beauties.

No doubt it would greatly stimulate Canadian interest in automobiles if American tourists were to be seen here in numbers during the year now opening, and as they, on the other hand, may greatly enjoy travel in a hospitable country that differs interestingly in many respects from the United States, the amended customs regulations as issued by Commissioner of Customs John McDougald, July 20, last, are herewith given in full. They read:

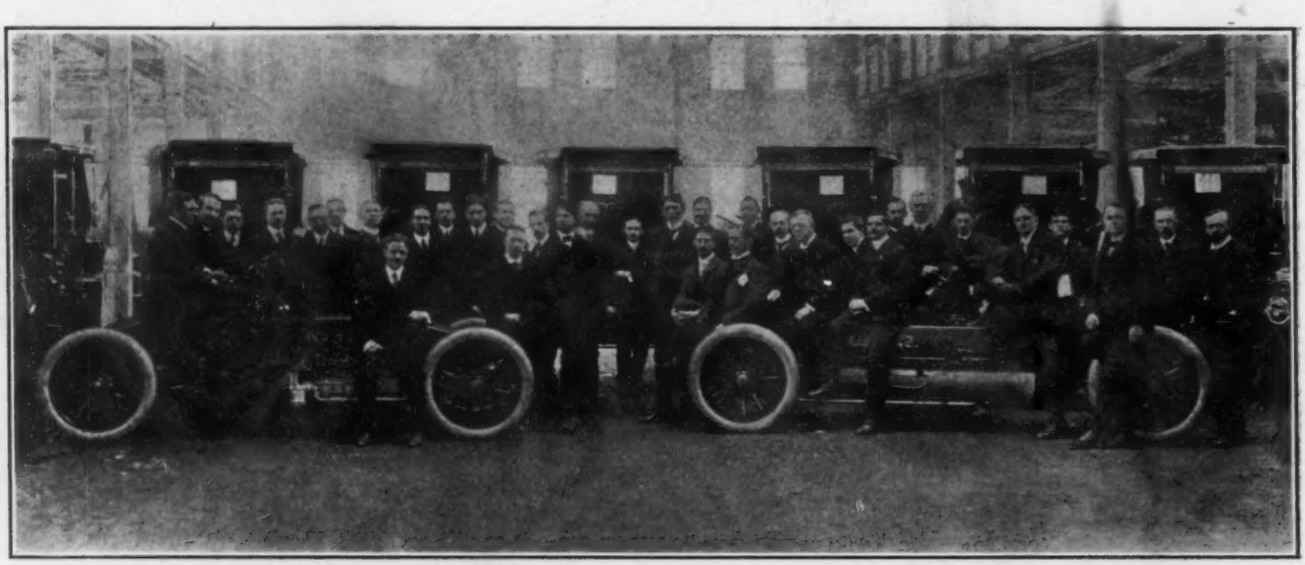
TOURISTS' AUTOMOBILES—AMENDED REGULATIONS.

The following regulations are substituted for those of May 15, 1903, (Memo. 1228 B.), in regard to automobiles, not new, in use by tourists coming temporarily into Canada and not domiciled in Canada, viz:—

1. The automobile shall not be used for gain or hire in Canada and shall be reported in duplicate on form approval (E. 39) at the custom house at the port of importation, where a careful examination and appraisement shall be made. An invoice showing the selling price of the automobile shall be produced (when practicable) as an aid to the collector in determining the value.

2. The collector may grant a permit (endorsed on the duplicate report) for the use of the automobile in Canada upon receiving a deposit of 5 per cent. of the value of the automobile and a bond for double the estimated duties, in the appended form, conditional for the due exportation of the automobile covered thereby within six months from date thereof

3. The bond shall be attached to the tourist's report, and the duplicate of the report shall be handed to the tourist with receipt thereon for the amount deposited, subject to refund on due exportation of the automobile within six months. The collector



NEW YORK, PHILADELPHIA, BOSTON, CHICAGO AND CLEVELAND NEWSPAPER MEN IN THE WINTON FACTORY.

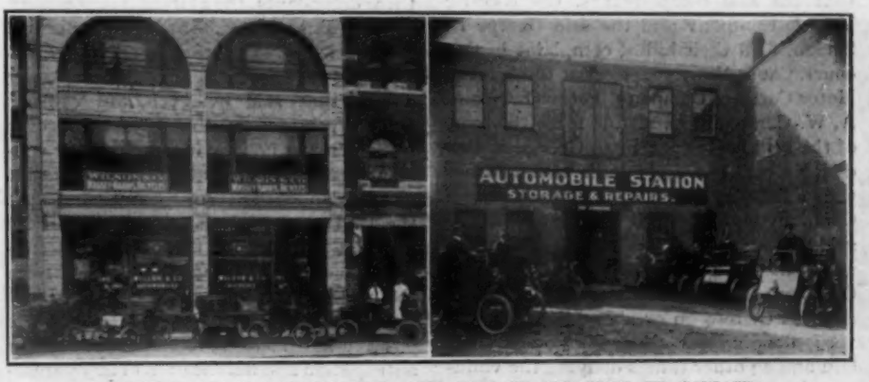
FIRST STORAGE STATION IN MONTREAL—Owned by General Automobile Co. of Canada.

may use his discretion in waiving the requirements for the 5 per cent. deposit, when he is satisfied that the automobile will be used in Canada only within the limits of the port of importation and vicinity.

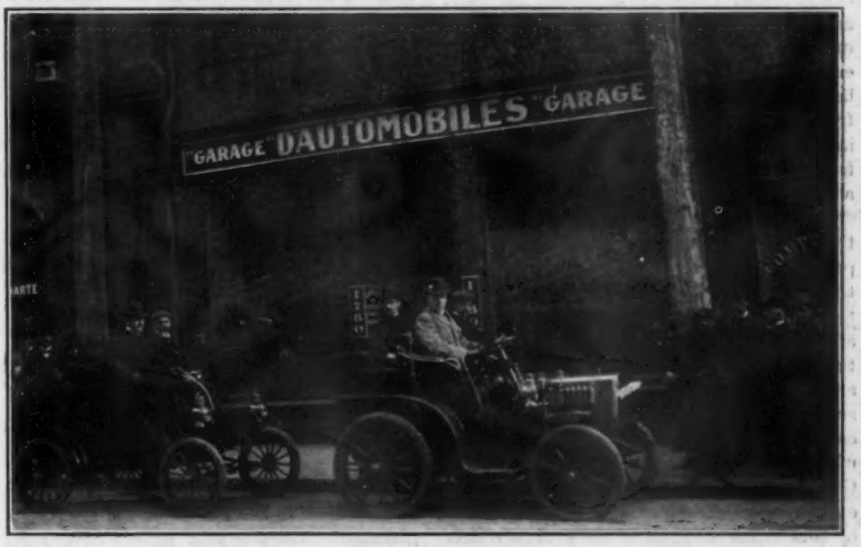
The special bond blank to be filled out may be obtained from the collectors of customs at all ports of entry and prescribes a full description of each automobile, and with such full description intending tourists should therefore arm themselves in advance to avoid delay.

As one of the signs of the awakening interest in all that pertains to automobiles it may be mentioned that *Album Universel*, an illustrated Montreal publication in the French language, published a special automobile edition of forty pages last August and utilized one of the old three-wheeled Columbia gasoline delivery vehicles in its own business.

In Ottawa, Canada's capital city, the population is perhaps more fully awakened to realize the practical usefulness of motor vehicles and the pleasures derived from their use, having had the benefit of garages and repair shops longer than Montreal. The place presented in one of the accompanying illustrations is the Wilson & Co. storage station, the building of which was completed in April, 1901. It has a handsome marble front which is one of the handsomest on Bank Street. B. S. Wilson manages the automobile department, which includes considerable exhibition space on the ground floor of the main building, a machine shop powered from two steam engines, 60 hp. and 12 hp., in the basement, and a 100-foot yard in the rear with washing places and drains. A newly erected rear structure, two stories, 40 by 45 feet, equipped with gasoline tank, two repair pits and the necessary machine and hand tools, constitutes now the storage and repair station proper, and is in charge of H. R. Wilson. The firm reports a good automobile business during the past year and very bright prospects for 1904.



WILSON & CO.'S SALESROOMS AND REPAIR STATION IN OTTAWA.



START FOR A RUN FROM THE MONTREAL GARAGE.
J. K. D. Ross and A. J. .De B. Corriveau in Napier Car and A. J. Patenaud in Northern.

A Story for Farmers.

On one of the large wheat farms of Dakota an experimental installation has been made which may lead to the development of the use of electricity in farming operations, writes the New York *Sun*. Power is generated at a mill site three miles from the farm, and transmitted in the usual way to a power mast forty feet high, set in open ground.

At the top of this mast is connected a double conducting cable 500 feet long, this in turn being connected to the tractor mobile, which consists of a 25-horsepower motor on a heavy carriage. A spar ten feet high is carried on the carriage, with a universal joint pulley on top, over which the cable is led to a drum on the carriage, which automatically takes up the slack cable as the tractor approaches the power mast, the current being taken by suitable connections through the drum to the motor.

In operation the tractor is hitched to a gang plough, or cultivator, or harvester, the cable being kept by the action of the drum from sagging to the ground. With this length of cable twenty-five acres can be worked, and the results are so satisfactory that it is proposed to extend the system to cover 600 acres, which will require 24 masts. The owners talk of fitting arc lamps to the masts for night work.

Defendants in Selden Suits Allege Fraud and Conspiracy.

In their answer to the bill of complaint filed against their clients by the Electric Vehicle Company and George B. Selden, Parker & Burton, attorneys for the Ford company of Detroit, which is also assuming the burden of defense for their agents and customers, make statements of general interest. After first contending that Selden jockeyed with the Patent Office to delay the issuance of the patent, that the invention described in the patent as finally issued is substantially different from that described in his original application in 1879, and that George B. Selden now has no interest in the patent, and is not a proper party to a suit for infringement, the answer goes on to state in substance as follows:

And these defendants for further answer to said bill of complaint say they are informed and believe and therefore aver that the said complainants, the Electric Vehicle Company and the said George B. Selden, filed their bill of complaint in this court, Cause No. 7,562, against the Winton Motor Carriage Company, Percy Owen and A. W. Chamberlain, setting forth the issue of the said letters patent to George B. Selden, No. 549,160, and avering among other things that the said Winton Motor Carriage Company had infringed the same; that the said bill was filed on or about July 13, 1900, and that the said Winton Motor Carriage Company filed its answer and its amended answers thereto on or about February 25, 1901, denying the allegations of said bill and among other things denying the validity of said patent, for the reason that the same was fraudulently issued and had been anticipated by various patents, and by constructions which had gone into public use prior to the date of the alleged invention of the said Selden, all of which was set forth at length in said answers; the complainants therein filed their replication thereto, and thereupon such proceedings were had that a large amount of testimony was taken setting forth the various constructions and anticipations of said letters patent, notably by one George Brayton at Providence, R. I. Boston, Mass., and Pittsburg, Pa.; together with exhibits showing such prior construction and reduction to practice of said alleged inventions; that a large amount of testimony was taken therein and a large number of publications and prior patents set forth, and were introduced as exhibits and introduced in evidence on the part of the defense, and that after the defense had nearly concluded the taking of their testimony, the said complainant, the Electric Vehicle Company, paid sums of money, the amount of which is to these defendants unknown, to both the attorneys and to the defendants in said cause, as an inducement to abandon, and because of which they did abandon, said defense and allowed a decree by consent to be entered against them, sustaining said letters patent and holding them as infringers under and with the understanding and agreement that they, the said defendants, were to be saved harmless in the way of costs and damages from the consequences of said acknowledged infringement, and were to yield up and they afterward did yield up by stipulation filed in said cause March 21, 1903, all of the evidence and exhibits taken and filed in said cause, portions of which were the drawings and parts of the original machines so built and put into use in anticipation of said alleged letters patent by said George Brayton and others, and that by such stipulation filed in this court the said defendants' attorneys consented and permitted the said complainants' attorneys in this cause, to withdraw, receive and retain and suppress from all knowledge of the public, and from these defendants, the aforesaid depositions, publications, models, drawings and parts of said anticipating machines, and these defendants jointly and severally expressly charge that said evidence and exhibits conclusively proved that the said George B. Selden was not the inventor of any substantial thing described and claimed in his aforesaid alleged letters patent, and that the said complainants and their counsel knew at the time of the aforesaid settlement and purchase of said defense from the said Winton Motor Carriage Company that the said exhibits and testimony were positive and incontrovertible proof of the anticipation and nullification of any patentable novelty in the said alleged Selden patent, and that such purchase and withdrawal from the files and records of the said Winton Motor Carriage Company was with the deliberate intent to suppress and destroy said evidence and said exhibits, and to hinder and delay, and prevent other members of the public, who were then engaged in making, using and selling gasoline motor carriages and who might be fraudulently and unjustly charged with infringement of said asserted letters patent, from maintaining and proving successfully a defense thereto.

And these defendants further assert that thereupon and thereafter a few selected parties were given so-called licenses under the so-called letters patent, and an association was formed, without being incorporated, of said so-called "Licensed Manufacturers," having a president, and secretary and treasurer, and a manager, and that such association was formed with a deliberate intent to monopolize the business of manufacturing gasoline automobiles, and that such association claims to have the exclusive management of the prosecution of this cause, and all other causes which might be brought charging infringement of the said asserted Selden patent.

And they further aver and charge that the said association, with the knowledge and consent and by the authority of the said complainant, the Electric Vehicle Company, and the said complainant, George B. Selden, continuously, persistently and untruthfully advertised and claimed in the journals devoted to that particular branch of industries, that the said United States patent of George B. Selden, No. 549,160, controls broadly all gasoline automobiles which are accepted as commercially practicable, well knowing that such statement was false and a fraud upon the public, and that such United States letters patent did not control broadly all gasoline automobiles which were accepted as commercially practicable, and that by reason of such organization formed for the purpose of controlling the market and not because of any honest belief or faith in the capacity and breadth of the said asserted Selden patent as asserted, the said complainants have falsely and fraudulently asserted that the public generally have acquiesced in the claims hereinbefore set forth in the said asserted Selden patent, well knowing that the large majority of the public and manufacturers have not so recognized their said claims; and well knowing that they had suppressed evidence and exhibits and facts which would nullify any claims that the said Selden patent was of any breadth or that it controlled all commercially practicable gasoline automobiles, all of which were contrary to equity and good conscience, and in this respect the defendants represent the public as well as themselves, and file this their answer in behalf of the public as well as themselves, and they pray the benefit of the foregoing facts as so set up as though the same had been set up in a cross bill in this action, and in this regard they further pray that an order be entered in this court that the said complainants' attorneys and solicitors, being the same as those who appeared for the said complainant in said suit against the Winton Motor Carriage Company, and who have received and appear to hold the depositions and evidence and exhibits filed in said cause, all of which are matters pertinent to this issue, be ordered and commanded to refile the same in said cause, so that these defendants and the public who are all interested in the scope and validity of the said alleged Selden patent may have the benefit therefor, and they make this their prayer in this connection with the same force and effect, and pray the same benefit thereof as if the same had been prayed and asked for in a cross bill or bill of discovery filed as ancillary pleadings in this cause.

And these defendants for further joint and several answer to the said paragraph 10 of complainants' bill aver that they are informed and believe and expressly charge that, for the purpose of inducing the public to acquiesce in the claims of the said complainants that the said patent covers all commercial gasoline automobiles, the said complainants falsely and fraudulently pub-

lished and circulated printed statements in contempt of this court as to the consent decree of this court in the said cause against the said Winton Motor Carriage Company and others, falsely and fraudulently stating and asserting that said consent decree, among others of the same tenor, had finally and fully established the validity of the said Selden patent, and that no court in the face of such decree or decrees would listen to any claim of anticipation or want of novelty, or that the patent was invalid for any reason; that such statements were not only published in the newspapers and trade journals and circulated by the publishers in their regular circulation, but were specifically circulated by complainants or under their authority, by mailing marked copies of such publication to those engaged in the trade, with the deliberate purpose on the part of complainants of inducing the recipients to believe such false and fraudulent statements and inducing them individually and collectively to acquiesce in such claims and in the herein asserted scope of the said Selden patent that it was impossible to build a gasoline automobile without infringing the said Selden patent, and to believe that this court had fully and finally considered all questions affecting the scope and validity of said patent, and had after such consideration, fully and finally sustained the same against any and all defenses whatsoever, well knowing that such claims were false and fraudulent and that this court and no other court of competent jurisdiction had ever rendered any such decree or decrees having the force and effect as asserted in said publications.

In support of their averments, the attorneys for the defense attach to their answer a list of early patents and names of pioneer investigators in the automobile field as well as references to the technical press.

Stanley Racer for Bowden.

It is reported that H. L. Bowden, of Waltham, Mass., is having built for his own use a Stanley steam racer similar to the one used by F. E. Stanley at the Readville meet of the Massachusetts Automobile Club last Decoration Day; but the new machine, while low-hung and encased so that only the heads of the operators will show above the top of the body, is to have a down slope in front to enable it to cut the wind easily and an up-slope underneath in the rear to prevent back suction. With this, it is said, Mr. Bowden intends to take a hand in several attempts to break records on the automobile circuit next summer. He will also have with him then, his new 60-horsepower Mercedes, which was shipped, last week, Thursday, by the Clyde Line steamer, to Florida, where he will try it out on the sea-rolled course at Daytona. With it went a French chauffeur whom Mr. Bowden engaged during his recent trip to Paris. The machine is guaranteed to do eighty-five miles an hour on a straightaway. Its racing weight, registered before shipment, was 2,375 lbs.

Correspondence

Questions on Radiation.

Editor THE AUTOMOBILE:

I take the liberty as a regular reader of your journal to ask a question or two. I notice in the *Motor Age* that 24 hp. is developed by 900 to 950 revolutions per minute in a three-cylinder engine, bore 4 1-2 by 5 1-2 inch stroke. If this engine in capable of producing 24 hp., why should a single-cylinder engine of same size or bore and stroke develop 8 hp. at the same number of revolutions? Second, Are the disks on the ordinary tubular radiator of any practical value? Does not heat loss depend upon the rapidity of radiation from the pipes containing water? If the air were permitted to pass quickly, instead of being arrested by the disks between and around the tubes, would the heat loss be greater? It looks to me as if the disks retard the admission of cool air to and from the tube, in so far retarding cooling. Is the heat lost by conduction through the disks greater than that obtained by the rapid evaporation from bare or simple round tubes?

J. A. BLOSE.

Altoona, Pa., Jan. 11.

It is customary to figure the power of a motor by multiplying the power of each cylinder by their number, not because this is absolutely correct, but because the relative superiority of the multicylinder type cannot be expressed in exact terms, as it varies with speed and load, being most pronounced at slow motor speed and high load.

Practice has shown that radiation flanges serve to cool a motor or a cooling coil if they are so placed as to admit the air freely. Strictly speaking, "radiation" plays only a small part in the cooling process, probably an infinitesimal part. The atmosphere *conducts* the heat away, and does so with more energy the more air molecules are brought in contact with the heated portions. A flange, being hot and of much larger area than its narrow base on the cylinder or the water pipes, will heat more air than the base would if it were bared, especially as time is a factor, so that the doubling of the speed of an air current would not result in quite doubling the cooling effect.

Of evaporation there is no question, so far as we can see.

Machines for Road Work.

Editor THE AUTOMOBILE:

We have undertaken the construction of a system of good roads in this country under my direction as chief engineer. In the past summer we have built about eight miles and yet have about eighty miles more to construct. After the experience of the past summer I have come to the conclusion that this work can be done very much cheaper if we would use traction engines and dump wagons for hauling the material from the cars to the road. Please give us the addresses of any companies who make these outfits and let it be known that we are on the market to purchase and will pay cash for a satisfactory equipment.

If you can give us any information in regard to this, it will be very much appreciated. We would like to have your opinion as to the use of gasoline engines for this work; whether they would be reliable, and if they would be as good as steam. Any information you can give us as to the manufacturers of the equipment will be much appreciated and treated as confidential.

S. C. LANCASTER.

Jackson, Tenn., Jan. 7.

American Gobron-Brillie Turned Down.

Editor THE AUTOMOBILE:

If you have a friend who wants a good machine cheap, you can endorse the Leppo engine and gearing in the highest terms. Ask any one who bought one of the latest "Shelby" cars and they can tell you how powerful and reliable they are. This refers only to the latest 1903 No. 3 type. This factory, on the very morning of mechanical success, was wrecked by greedy, impatient stockholders who knew no more about automobiles than does an Indian. A careful study of the Leppo engine will convince any mechanic of its merits. It is the only single cylinder, double piston engine made; and has consequently only half the explosive recoil of the "dead" end, single piston engine. It must be seen to be appreciated. The finish and fittings of the machine will speak for it. I court a careful inspection.

W. T. GELTZ

Mansfield, O., Jan. 5.

Cooling with Oil.

Editor THE AUTOMOBILE:

I have just made a test of an anti-freeze article and am so thoroughly well pleased with it that I would like to have others know of the results. It is no less than an inexpensive lubricating oil of the "Standard's" make, called Polar Ice Machine. I put this clear (no water) in a 4-cylinder Toledo car that holds but 3 1-2 gallons, and ran the engine for an hour and a half, a great deal of the time with the car standing, and it cooled every bit as much as water. If a car has a good circulating pump and sufficient radiation, it will undoubtedly cool sufficiently and it will not freeze.

A. T. WILSON.

Denver, Colo., Jan. 8.

The Joliet Auto and Garage Co. has been granted papers for a corporation of $25,000. The stock of the company has been placed in small amounts among prominent people and merchants of Joliet and among all the automobile owners.

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SATURDAY, JANUARY 16, 1904.

OUR SHOW REPORTS.

We confess to a breach of a certain tradition in not presenting in this issue a "forecast" of the New York automobile show. The breach is a deliberate one and serves to indicate our purpose of reporting to the readers of THE AUTOMOBILE, mainly in the issues of January 23 and 30, every feature of the show which shall prove of real interest as fully as possible from actual observation and study rather than from advance information which can at best be only fragmentary and uncritical. The automobile industry has in a manner indicated its approval of this course, and a substantial advancement in its appreciation of the proper functions of the press as well, by placing a more than ordinarily liberal amount of advance information at the disposal of our readers in the advertising pages of this number, where it appears under its true colors and reinforced by the directness of a clean-cut business announcement.

While realizing that even the best talent must fall short of observing and digesting, as well as reproducing in fitting words and pictures, in one brief week all that which has engaged the attention of hundreds of manufacturing establishments for a half year or longer, we hope in our next issues to succeed in presenting all the essential facts and to gather a few of the threads of thought by which the innumerable details of the large exhibition are connected, so as to assist those who visit the show to remember what they have seen and possibly facilitate that almost painful process of classifying and sifting facts and impressions through which all must pass before the information spread so lavishly but also chaotically at the exhibition itself may be turned to practical account for each show visitor's individual purposes.

As set forth in detail on another page the show week will be the occasion for an unusually large number of meetings, conventions, banquets and orations, where the sharp edges of business competition and individual ambitions will be pleasantly glossed with social amenities, but where nevertheless many things of high importance for the automobile industry, the Good Roads movement, and the association life that groups itself around the more general aims in the trade, sport and utility of automobilism will be placed on the keel to be launched for better or worse. These affairs have come to belong to the institution of annual shows almost as much as the exhibition of new construction, new accessories and new styles, and they lend a color and importance to the occasion which can hardly be properly appreciated in wide circles, unless the press reports them so fully as to convey a true picture of what they represent, to that large majority of motorists throughout the United States who cannot visit the show or attend its functions. Full reports of these functions will therefore also be a feature in our show issues.

But apart from the efforts which will be put forth to furnish a true and proportionate reflection of the whole event in our reading columns, we cannot refrain from calling the special attention of all to the great mass of information of equal or higher immediate value which will be found in the advertising pages only, and much of which would be fully entitled to editorial mention but for the fact that it deals with subjects of strongly marked proprietary character.

THIEVERY AND DOGS.

From Chicago and from Buffalo, from towns in Wisconsin and towns in Ohio, complaints are voiced more and more loudly of the numerous thefts of lamps, robes, horns, and even battery boxes from automobiles left standing in the street. Worse than that, the vehicles are entered and driven away by unknown persons and sometimes that is the last heard of them; in other cases the car is found abandoned in some out of the way place half a hundred miles from where the owner left it. It should be comparatively easy to avoid the loss of complete vehicles, as safety plugs and locking devices which make the mechanism inoperative may be fitted to any type of motor vehicle, but the thefts of accessories seem to call for other means of protection. Having discarded the horse, shall we be compelled to employ another animal, the dog, to guard the paraphernalia which take the horse's place? It seems quite likely, if the thievery continues, that an automobile watchdog will become a necessary and fashionable acquisition. It would not be a bit surprising, indeed, if the questions as to the suitable breed for automobile conditions were to assume the dignity of a topic of the day, for it may be assumed in advance that the dogs which are fierce enough and faithful enough to do watch duty, such as the bull dog, the bull terrier, and the Dalmatian are too thin-coated for sitting still during a fast drive on a chilly day. Bud, the bull terrier that traveled across this continent with Doctor Jackson, got sore eyes, it was said, from the unusual work. The natural goggles of a skye terrier might be a good feature in this respect, but on the other hand, size is required and a good capacity for running both fast and far, so as to permit leaving the dog to run after the machine for a few miles when desirable either for the animal's health or for other reasons. A good poodle might serve fairly well or an Old English sheep dog. The subject is intricate, but we shall be glad to learn more about it from those who have ideas or experience by which others may be guided in the choice of a breed that will keep a car safe and its owner in fashion.

Sooner or later the necessity that seems to exist for protection of car equipments, will bring some breed of dog to the front which is especially fitted to become the professional automobile dog, and we aspire to the honor of naming it, while depending largely on our dog-learned readers' generosity in imparting competent information for realizing our hopes in this respect.

One of the New York dailies recently had a contribution on the subject of automobile dogs, but we are afraid it was not as serious as we are. With singular levity the author allowed his remarks to appear as coming from "a red-faced man":

"'Say,' continued the red-faced man, who has been speaking of the virtues of automobiles as compared with horses, "isn't it funny that no one has ever thought of having auto dogs? Now that they've solved the horse problem, why don't they try the dog problem?

"No, no, I don't mean like those little mechanical toys you see on Fourteenth Street. I mean a sure enough gasoline dog, with a steam bark attachment. Something that could be regulated by a rubber tube leash with a bulb on the end.

"Just think of it. You could regulate his speed and direction, and there'd never be any danger of his getting in fights. You wouldn't ever have to feed him.

And during the summer, if you didn't want to take him to the country, you could store him with some furrier, who would be only too glad to insure him against fleas and moths.

"Great, isn't it? I expect 'most any day now to read in my morning paper that 'Willie Lightweight was seen on the avenue yesterday with his new racing auto-terrier, the Purple Towser,' or 'Miss Dolly Dimpletoe was noticed in the park exercising her recently imported motor-poodle, the Pink Fido.'

"Of course, there'll be accidents at first, just as there were with automobiles. I shouldn't be a bit surprised to hear 'most any minute that 'While nine-year-old Lizzie Schlitz was playing with her 16-pup-power gasoline grayhound the dog exploded, inflicting slight wounds about the face. Lizzie's face was cauterized and the pieces of dog were gathered up and taken to the junk pound.'"

We pause to remark, after this quotation, that we see no sense in setting an inanimate motor-dog, however interesting such a creation would be, to watch a motor vehicle.

It is said that by some magic of the atmosphere and the environment any sluggish clodhopper from the backwoods of Europe becomes imbued with American energy almost as soon as he sets foot on the blessed Western soil. While we feel capable of giving a rational explanation of this metamorphosis—or as much of it as is true—the rule seems to work the other way as well, for we see occasionally in French, German and English papers complete descriptions of American cars which it had proved impossible to obtain from the manufacturers here, even though a competent person was sent direct to their factories for the purpose. Here policy of secrecy is considered essential, but no sooner has the car been received at the European agency before it is taken apart and its entire mechanism photographed and laid bare to the European public; and ten days later the description is returned to these shores in the pages of one of our transatlantic contemporaries. What accounts for the change of heart and policy that comes over the American manufacturer when he seeks foreign trade?

Congratulations are to be extended to the New York automobile trade for their unanimity and snap in forming a trade club intended to foster a fraternal spirit and facilitate friendly and informal discussion of matters of general or business interest. The immediate response to the call by nearly all prominent trade members seems to indicate with certainty that the idea of arranging a convenient and hospitable place for meeting without notice and formalities met a long-felt want.

BANQUETS AND MEETINGS DURING SHOW WEEK.

Functions Twice as Numerous as Last Year Bid Fair to Become Well Attended and Perhaps Stormy.

ELABORATE PREPARATIONS FOR CLUB SEXA.

The annual gathering of the majority of the leaders in the industrial, racing and pastime branches of automobiling in attendance at Madison Square Garden Show furnishes the best opportunity of the year for the holding of business meetings and banquets of all the automobile trade and club organizations of national scope, as large attendance at such meetings is assured because of the convenience to the members and the freedom of all from the usual demands of the routine business of their offices. These advantages are so fully recognized by the officers and directors of the associations that "show week" in New York has become the foremost "automobile week" of the year in America—a week so crowded with social functions and business affairs incidental to the exhibition and the various associations as to fully occupy every day and every night into the small hours during the eight-day "week," and coming as it does after a protracted period of strenuous rush work to get show cars and displays ready for the opening, leaves every participant in something of a mental whirl and entertaining an ardent yearning for an equally protracted period of respite.

Each succeeding year sees the number of these annual meetings increase, and this winter there will be twice as many as last year. Foremost among the functions announced for next week is the fifth annual banquet of the Automobile Club of America, to be held in the Astor gallery of the Waldorf-Astoria Hotel on the Saturday evening of the close of the show, January 23. Preparations for this affair, in which it is contemplated to lay not less than 500 covers, were completed early this week. Superb decorations that will be unique in their harmony with the objects and spirit of the occasion, and an unusually fine orchestral and vocal program have been arranged for. The drift of sentiment at the dinner is expected to set strongly in the direction of highway improvement. U. S. Representative W. B. Brownlow, father of the Brownlow Bill now pending in Congress, has accepted the club invitation to speak on the subject of national aid in road building, and Col. Albert A. Pope, who will also make an address as an invited guest, will undoubtedly have something to say on his good roads hobby that will be well worth listening to. Among the other invited guests who are deeply interested in the subject and actual work of highway improvement are: Hon. James Wilson, Secretary of Agriculture; Hon. Martin Dodge, Director of the Office of Public Road Inquiries; and Maurice O. Eldridge, assistant director; State Highway Commissioners: Henry I. Budd, of New Jersey; James H. McDonald, of Connecticut; W. E. McClintock, of Massachusetts, and James W. Hunter, of Pennsylvania; Governor Franklin S. Murphy, of New Jersey, and State Engineer Edward A. Bond, of New York.

The relation of automobilists to legislation and their use of the highways will also be touched upon and, in addition to Governor Murphy, the sentiment of the motorists in this direction will be felt by United States Senator Jacob H. Gallinger, of New Hampshire, and Redfield Proctor; Representative Brownlow; State Senator Henry S. Scovel, father of the Scovel Bill that is now in force, with modifications, as a law in New Jersey; State Senator William T. Boyle, of New Jersey; and Police Commissioner William McAdoo, of New York City.

The New York State Automobile Association will be represented at the guests' table by President William H. Hotchkiss of Buffalo.

Other guests and speakers are Simeon Ford, the witty after-dinner speaker; James B. Dill, of Orange; Gage E. Tarbell and Jacob H. Gallinger.

President Winthrop E. Scarritt, of the Automobile Club of America, will act as toastmaster.

Of especial interest to manufacturers and other trade members are the annual business meeting and election of directors of the National Association of Automobile Manufacturers, set for the forenoon of Thursday, January 21, in the Madison Square Garden Building, and the annual banquet of the same organization, to be held in the Café Martin, at Broadway and 26th Street, Friday night, January 22. It is rumored and expected that the business meeting and election will be of more than ordinary interest, owing to the apparently too close relations of the N. A. A. M. with the Association of Licensed Automobile Manufacturers through dual officerships and juxtaposition of headquarters, and the feeling among those members of the older association who do not belong to the A. L. A.M. nor pay tribute to it in the form of a license tax under the Selden patent, that their interests will not be fostered impartially. This seeming dominance of the affairs of the N. A. A M., which itself has never been broad enough to satisfy the whole trade, by the still narrower and more partial organization, promises a lively election with considerable opposition to the regular regime. It is not unlikely that amendments to the constitution and by-laws will be proposed and efforts made to wholly dissociate the two leading national trade organizations.

President I. B. Potter of the American Motor League announces a convention of his organization to take place at Madison Square Garden on Tuesday, Wednesday, Thursday, and Friday of next week. The announcement includes the following details: The first day (Tuesday, January 19,)

will be given up to the exercises of "good roads day," and prominent speakers have accepted invitations to address the meeting. These include Senator A. S. Mann of Florida, Hon. George A. Pearre, Member of Congress from Maryland; Hon. Martin Dodge, director of the government road inquiry bureau at Washington; Mr. Shattuck of the Automobile Club of America; State Highway Commissioner's McClintock of Massachusetts, Budd of New Jersey, and McDonald of Connecticut and State Engineer Bond of New York.

Col. Albert A. Pope has been invited to address the meeting. Assistant Director M. O. Eldridge of the government road inquiry bureau will deliver a lecture illustrated by stereopticon views of roads of different countries. On Tuesday, January 20, papers and addresses on subjects of general interest to the automobile world will be delivered. Professor Carpenter of Cornell, Professor Hutton of Columbia, C. E. Duryea, A. L. Riker, Henry Souther, E. W. Roberts, Alexander Winton, and others have been invited to speak on technical subjects. On the 21st and 22nd inst. the time will be taken to form organizations, both States and local, and a general register of automobilists will be made up for that purpose.

New York State club members and individual motorists are invited, in a bulletin just distributed by Secretary-Treasurer Frederick H. Elliott, to attend special meetings of the newly organized New York State Automobile Association to be held on Thursday and Friday of show week, January 21 and 22, in the clubrooms of the Automobile Club of America, 753 Fifth Avenue, beginning each day at 10.30 a.m. There will be a general discussion of the objects and work of the organization and of ways and means by which they shall be carried out, particularly in the direction of legislation and highway improvement. Special rates of a fare and a third for the round trip during show week have been secured for all members of the N. Y. S. A. A. who care to avail themselves of the opportunity of attending these meetings and the Madison Square Garden exhibition at the same time.

With the object of interchanging reminiscences and perpetuating the bonds of fellowship formed by participants in the ever-memorable N. A. A. M. endurance run from New York to Pittsburg last October, plans have been laid for a reunion of the 150 participants at a dinner to be held in the Madison Square Garden Building on the night of January 21, beginning at 10 o'clock. Steps may be taken at this meeting to form an honorary membership organization for which the name "The Mudlarks" has been suggested. Secretary A. B. Tucker, of the N. A. A. M., has appointed Augustus Post of New York, general chairman of the committees on arrangements, and other committeemen as follows: Dinner, C. H. Gillette, chairman; H. H. Everett, F. H. Fowler, and H. C. Esselstyn. Entertainment, M. L. Davis, chairman; A. F. Comacho, Louis R. Smith, and N. Lazarnich. Invitation and Membership, M. C. Reeves, chairman; H. M. Davis, H. B. Haines, and H. E. Dey. Publicity, F. Ed. Spooner, chairman; Arthur E. Jervis, J. C. Wetmore, H. W. Perry and R. H. Johnson.

It is proposed to make the occasion one of merriment and commemorative of the most notable endurance run ever held.

EXHIBITORS AT HERALD SQUARE HALL AUTOMOBILE SHOW.

The automobile exhibition to be held in Macy's Herald Square Exhibition Hall in New York, which opens simultaneously with the Madison Square Garden show, will be continued for one week after the close of the latter, and Manager Alfred Chasseaud of the Herald Square Hall, announces that a number of additional exhibitors can be accommodated during the second week and that vehicles and goods for display will be received on Sunday, January 24, at the 34th Street freight elevator, which will be kept running. Space during this second week will be sold at a nominal charge.

The hall will be open every day during the two weeks from 10 a. m. to 11 p. m., and attractive decorations and good music provided. A line of automobile passenger cars will be in operation between the two shows during the first week.

Following is a list of the exhibitors that have already taken space:

Detroit Automobile Company, Chicago, Ill.; Rockaway Automobile Company, Rockaway, N. J.; Palmer Bros., Cos Cob, Conn.; Hendee Mfg. Co., Springfield, Mass.; Clodio & Widmayer, New York; Geneva Automobile & Mfg. Co., Cleveland, O.; Reading Standard Cycle & Mfg. Co., Reading, Pa.; Babcock, Atwood & Bowen, New York; Wm. H. Terwilliger & Co., Amsterdam, N. Y.; Kenneth Skinner, Boston, Mass.; Auto Import Company, New York; Relay Motor Car Company, Reading, Pa.; Springer Motor Vehicle Company, New York; American Auto Storage Company, New York; Snow Mfg. Company, Middletown, Conn.; United Motor Corporation, Pawtucket, R. I.; Synnestvedt Vehicle Company, Pittsburg, Pa.; Springfield Moulding Works, Auto Houses, Springfield, Mass.; Chas. H. Metz, Waltham, Mass.; Cushman Motor Co., Lincoln, Neb.; C. R. Radcliff, New York; William Roche, New York; Adam Cook's Sons, New York; Tennant Auto-Tire Company, Springfield, O.; St. John Patent Rubber Tire Company, Philadelphia, Pa.; M. A. Connell, New York.

An agency for the Stearns automobiles has been located for a month past at Pasadena, but is being moved to Los Angeles and at present, headquarters are at the Automobile Livery, 331 South Main Street.

Philadelphia Show Space All Taken.

PHILADELPHIA, Jan. 11.—With the opening of the annual local automobile exhibition only a fortnight ahead, financial success is already assured and only a small proportion of space remains unsold. About ten of the smaller spaces around the walls of the Second Regiment Armory are still for sale, though negotiations for them are pending and Manager Schlichter officially announces that the entire space at his disposal will have been taken by Thursday next.

Some of the larger local exhibitors who postponed the securing of space till last week, find themselves in a quandary. John Wanamaker, who has always been largely represented at former shows here, has been compelled to take three small spaces along the western wall of the armory. Others are similarly situated.

The social feature will not be lacking at the coming show, arrangements having been made to entertain visiting automobilists. Officers' quarters will be utilized as reception rooms, and other means taken to render the visit of out-of-towners pleasant.

Following is the list to date of branch houses, local dealers and manufacturers who have taken exhibition space, and the cars or sundries they will display:

Banker Bros. Co., Peerless, Autocar, Stevens-Duryea, and Pierce; Keystone Motor Car Co., Ford, Reber, Baker, and Packard; H. S. Lane Motor Car Co., Orient; Rambler Automobile Co., Rambler; Pope Manufacturing Co., Pope, Pope-Hartford, Pope-Waverley and Pope-Tribune; W. W. Gawthrop, Elmore and Yale; A. E. Maltby, Winton; Knox Automobile Co., Knox; Buckmobile Co., Buckmobile; Sylvan Dalsimer, Crestmobile; Jones-Corbin Auto. Co., Jones-Corbin; Berg Auto. Co., Berg; John Wanamaker, Searchmont, Cadillac, and Studebaker; F. A. LaRoche, Darracq; H. B. Hart, Eldridge; German & French Auto. Industry, Benz, Mercedes, Renault, Panhard-Levassor, De Dion-Bouton and Stoever electric; Manhattan Storage Co., Toledo steamer; A. Krauss, Quaker City automobiles; Harper Auto. Co., Stanley steamers; Boss Knitting Machine Works, Boss steam automobiles; Jacob Reed Son's, automobile clothing; Charles Krauss, Indian motorcycles; Willow Ware Co., automobile baskets; Gibney Bros., automobile tires; Rose Manufacturing Co., Neverout lamps; Diamond Electric Co., electric connections and charging station; Rubay & Co., automobile accessories; Twentieth Century Manufacturing Co., lamps; Emil Grossman, tires, lamps, automobile jacks and parts; Automobile papers: *Cycle and Automobile Trade Journal*, THE AUTOMOBILE, *Automobile Topics*, *The Motor*, and *Automobile Review*.

The Los Angeles Automobile Company is closing up its agency for several machines and devoting most attention to the Ford, which is having a good sale.

Complete List of Exhibitors at Madison Square Garden Show.

JANUARY 16 TO 23.

Allers & Co., Harry.
American Ball-Bearing Co., Cleveland.
American Coil Co., W. Somerville, Mass.
American Motor Co., Chicago.
Apperson Bros. Automobile Co., Kokomo, Ind.
Atwood Manufacturing Co., Amesbury, Mass.
Autocar Co., Ardmore, Pa.
Automotor Co., Springfield, Mass.
Auto. Import Co., New York.
Auto. Supply Co., New York.
Axiom Carbureter Co., New York.

Badger Brass Mfg. Co., Kenosha, Wis.
Baker Motor Vehicle Co., Cleveland.
Baldwin Chain & Mfg. Co., Worcester, Mass.
Berg Automobile Co., New York.
Bliss Co., E. W., Brooklyn.
Blomstrom Motor Co., Detroit.
Bowman Automobile Co., S. B., New York.
Bowser & Co., Inc., S. F., Ft Wayne, Ind.
Brennan Mfg. Co., Syracuse.
Briscoe Mfg. Co., Detroit.
Brown-Lipe Gear Co., Syracuse.
Buckmobile Co., Utica.
Buffum Co., H. H., Utica.
Buffalo Electric Carriage Co., Buffalo.

Cadillac Automobile Co., Detroit.
Central Automobile Co., New York.
Centaur Vehicle Co., Buffalo.
Champion Mfg. Co., Brooklyn.
Charley, C. L., New York.
Cole & Woop, New York.
Columbia Lubricants Co., New York.
Columbia Nut & Bolt Co., Bridgeport, Conn.
Consolidated Motor Co., New York.
Continental Caoutchouc Co., New York.
Columbus Motor Vehicle Co., Columbus.
Coldwell Lawn Mower Co.,
Corliss & Co., William.
Covert Motor Vehicle Co., Lockport, N. Y.
Cramp & Son Ship & Engine Bldg. Co., Wm., Philadelphia.
Crest Mfg. Co., Cambridge, Mass.

Dayton Electrical Mfg. Co., Dayton, O.
Dawson Machinery Co., J. H., Chicago.
DeDion-Bouton Co., France.
Desberon Motor Car Co., New York.
Detroit Motor Works, Detroit.
Diamond Rubber Co., Akron, O.
Dieter Steam Engine Co.
Dietz Co., R. E., New York.
Dow Portable Electric Co., Braintree, Mass.
Duerr-Ward Co., New York.
Duryea Power Co., Reading, Pa.

Eisenhuth Horseless Vehicle Co., Middletown, Conn.
Electric Contract Co., New York.
Electric Vehicle Co., Hartford.
Elmore Mfg. Co., Clyde, O.
English & Mersick Co.,

Fawkes Rubber Co., Denver.
Federal Mfg. Co., Cleveland.
Firestone Tire & Rubber Co., Akron.
Fisher, Alexander, New York.
Fischer Motor Vehicle Co., Hoboken.
Fisk Rubber Co., Chicopee Falls.
Ford Motor Company, Detroit.
Franklin Mfg. Co., H. H., Buffalo.
Fredonia Mfg. Co., Youngstown, O.
Funke, A. H., New York.

Gray & Davis, Amesbury, Mass.
Graham Co., The, Indianapolis.
G & J Tire Co., Indianapolis,
Gleason-Peters Air Pump Co., New York.
Grossman, Emil, New York.
General Electric Co., Schenectady, N. Y.
Georges-Richard-Brasier Co., New York.
Gibbs Engineering & Mfg. Co., Glendale, L. I.
Goodrich Co., B. F., Akron, O.
Goodyear Tire & Rubber Co., Akron, O.
Gould Mfg. Co.,

Hartford Rubber Works Co., Hartford.
Haynes-Apperson Co., Kokomo, Ind.
Hendee Mfg. Co., Springfield, Mass.
Herz & Co.
Hine-Watt Mfg. Co., Chicago.
Hollander & Tangeman, New York.
Howard Automobile Co., Yonkers, N. Y.
Hyatt Roller Bearing Co., Harrison, N. J.

Imperial Wheel Co., Flint, Mich.
India Rubber Co., Akron.
International Auto. & Vehicle Tire Co., New York.
Iven Co. C. J.

Jeffery & Co., Thos. B., Kenosha.
Jones-Corbin Automobile Co., Philadelphia.

Kirk Mfg. Co., Toledo.
Knox Automobile Co., Springfield, Mass.

La Roche & Co., F. A., New York.
Light Mfg & Foundry Co., Pottstown, Pa.
Livingston, D. McRae.
Locomobile Co. of America, Bridgeport.

Mack Brothers Co., Brooklyn.
Manhattan Lamp Works, New York.
Martin, F. L. C. Auto Co.
Matheson Motor Car Co., Grand Rapids.
Midgley Mfg. Co., Columbus, O.
Miller, Charles E., New York.
Model Gas Engine Co., Auburn, Ind.
Modern Mfg. Co.
Motor Cycle Mfg. Co., Brockton, Mass.
Morgan & Wright, Chicago.
Mosler, Arthur R., New York.

National Motor Vehicle Co., Indianapolis.
National Carbon Co., Cleveland.
National Cement & Rubber Co., Toledo.
Newbury & Dunham.
New Jersey Brake Co., Newark.
New York & New Jersey Lubricant Co., New York.
Northern Mfg. Co., Detroit.

Olds Motor Works, Detroit.
O. K. Machine Works, Buffalo.

Packard Motor Car Co., Detroit.
Panhard & Levassor, New York.
Parish & Bingham, Cleveland.
Pittsfield Spark Coil Co., Pittsfield, Mass.
Peerless Motor Car Co., Cleveland.
Phelps Motor Vehicle Co., Stoneham, Mass.
Pierce Co., Geo. N., Buffalo.
Pioneer Auto. & Campus Motor Co.
Pope Mfg. Co., Hartford.
Pope Motor Car Co., Toledo.
Pope-Robinson Co., Hyde Park, Mass.
Post & Lester, Boston.
Prescott Automobile Mfg. Co., New York.

Quinby & Co., J. M., Newark, N. J.

Rainier Co., The, New York.
Reid Mfg. Co., Detroit.
Regas Automobile Co., Rochester.
Reliance Motor Cycle Co., Addison, N. Y.
Richmond Mfg. Co.,
Rochester Steam Motor Works, Rochester.
Rodgers & Co., Columbus, O.
Rose Mfg. Co., Philadelphia.
Rotary Motor Vehicle Co., Boston.
Royal Equipment Co., Bridgeport, Conn.
Royal Motor Car Co., Cleveland.
Rubay, Leon, New York.
Sandusky Automobile Co., Sandusky, O.
Scoville & Peck Co., New Haven.
Société Anonyme Des Anciens Etablissements, France.
Société Franco-Americaine d'Automobiles, New York.
Shelby Steel Tube Co., Shelby, O.
Skinner, Kenneth A., Boston.
Smith, Elwin, Boston.
Smith & Mabley, Inc., New York.
"Sta-Rite" Co., The, Detroit.
Standard Automobile Co. of New York.
Standard Welding Co., Cleveland.
Stearns Co., F. B., Cleveland.
Stevens Arms & Tool Co., J., Chicopee Falls.
Splitdorf, C. F., New York.
Springer Motor Vehicle Co., New York.
Springfield Automobile Co.,
Stodder Tire Co, New York.
Studebaker Bros. Mfg. Co., South Bend, Ind.

Thomas Motor Co., E. R., Buffalo.
Timken Roller Bearing Axle Co., Canton, O.
Twentieth Century Mfg. Co., New York.
Twombley, W. Irving.

Universal Jack & Power Co.
Upton Machine Co., Beverly, Mass.
U. S. Long Distance Automobile Co., Jersey City.
Utility Co., The.

Varley Duplex Magnet Co., Providence, R. I.
Veeder Mfg. Co., Hartford.
Vehicle Equipment Co., Brooklyn.

Walter Car, The, New York.
Waltham Mfg. Co, Waltham, Mass.
Warner Gear Co., Muncie, Ind.
Weston-Mott Co., Utica, N. Y.
Wetzel, T. J., New York.
Whalebone Rubber Co., New York.
White Sewing Machine Co., Cleveland.
Whitlock Coil Pipe Co., Hartford.
Whitney Mfg. Co., Hartford.
Willis Co., E. J., New York.
Winton Motor Carriage Co., Cleveland.
Woods Motor Vehicle Co., New York.

Chicago Coliseum Temporarily Closed.

In consequence of the recent disastrous fire in the Iroquois Theater in Chicago, the inspection of theaters and halls has been prosecuted with such rigor that 150 of these places have been condemned as unsafe and been compelled to close, pending remodeling. Many of them will never be opened again. Among the structures having technically unlawful features is the Coliseum, the huge building where the Chicago automobile show is to be held. One of the objections to it is that it does not open on three streets or alleys; another that the exits are not in compliance with the law. The management showed, however, that the building is safe, and the order to close it was rescinded.

Mission of Boston Show.

BOSTON, Jan. 11,—Boston dealers are confident that their second annual show in March, although it comes almost at the end of the show season, will be popular with the public and interest many persons in Boston and farther north in New England who cannot be made to take an interest in automobiles before the riding season is near at hand, and do not care enough about automobiles at present to attend the New York show.

MASSACHUSETTS AUTO CLUBS FORMALLY ASSOCIATED.

Delegates Meet in Boston and Adopt Constitution Provisionally and Elect Officers—E. C. Lee President.

ANOTHER MEETING SET FOR JANUARY 26.

BOSTON, Jan. 9.—Directors of the Massachusetts State Automobile Association met in the Touraine Hotel last Saturday and completed the formal organization of the association by the election of officers and the provisional ratification of of the constitution. Dr. Julian A. Chase of Providence, president of the American Automobile Association, and Secretary C. H. Gillette were present and discussed at length the aims and objects of the association. Officers were elected as follows: President, Elliott C. Lee, Massachusetts A. C.; vice-president, Franklin Weston, Berkshire A. C.; secretary-treasurer, L. H. Greenwood, Wachusett A. C.

The appointment of committees was postponed until the next meeting which will be held Tuesday, January 26, at the Touraine, at 3 o'clock, at which time the committees will be appointed and active work started. The new officers of the association have already started on the work of recruiting members and getting the organization in shape for early active work.

It is expected that all of the following nine active clubs in the State will send directors to the meeting on January 26: Massachusetts A. C., Worcester A. C., A. C. of Springfield, Berkshire A. C. (Pittsfield), Wachusett A. C. (Fitchburg), Brockton A. C., Marlboro A. C., New Bedford A. C., and Lowell A. C.

New clubs are forming in several of the smaller cities of the State and it is hoped that these will join the State association as fast as organized.

Mr. Lee, as president of the Massachusetts Automobile Club, brings considerable experience to the executive office of the new association and is very much interested and enthusiastic in the work. Mr. Weston, as vice-president, is well known as an enthusiastic automobilist in the western part of the State and is one of the active workers in the Pittsfield club. Mr. Greenwood was one of the organizers of the Fitchburg club and is well known to automobilists in all parts of the State. His will be the most active position in the new association.

Massachusetts Club Honors Ex-President.

BOSTON, Jan. 12.—Members and friends of the Massachusetts Automobile Club gave a dinner at their handsome clubhouse last evening in compliment to their retiring president, Col. James T. Soutter, whose efforts have been responsible for much of the activity and progress in the club within the past two years. Nearly sixty motorists were present. President Elliott C. Lee, who succeeds Colonel Soutter, acted as master of ceremonies, and in opening the proceedings paid a fine tribute to Colonel Soutter as a leader in the club. The ability of the club to erect a large addition to its building was pointed out as one of the lines of work that would have been impossible without the prosperity which had come as a result of Colonel Soutter's energetic administration. The retiring president thanked his friends for their kind words and for their support. Speeches were made also by President Julian C. Chase, of the Rhode Island Automobile Club and the American Automobile Association, by L. H. Greenwood, secretary of the new Massachusetts State Automobile Association and by Dr. Hoitt, president of the Automobile Club of Marlboro.

Syracuse Club Banquet and Election.

SYRACUSE, Jan. 12.—The second annual banquet of the Automobile Club of Syracuse was held at the Yates Hotel here on the evening of January 6, and was one of the pleasantest affairs of the kind ever held in the city. Club members and guests, including a number of city, county and State officials, as well as automobilists from other cities, to the number of seventy, enjoyed the banquet and the feast of wit and reason that followed.

C. Arthur Benjamin was toastmaster and there wasn't a dull moment during the many toasts. Mayor Alan C. Fobes, Robert E. Gilman, Corporation Counsel Walter W. Magee, Judge Frederick W. Thompson, Giles H. Stilwell, Harlan W. Whipple of New York, Hendrick S. Holden, Howard P. Denison, William H. Dyer, Clarence G. Brown and Hurlbut W. Smith were the speakers and each responded in a happy vein.

The banquet committee, upon which the affair reflected much credit, was composed of Hurlbut W. Smith, W. L. Brown, F. H. Elliott, C. A. Benjamin and Harry C. Pierce.

The annual meeting of the club, held Monday evening, brought to light the fact that the membership has been doubled in the past year, so that now fifty-six active members are enrolled. Plans were made at the meeting to bring into the club every automobile owner and enthusiast in the city during the coming year.

The officers elected for the coming year follow: President Willet L. Brown; first vice-president, Hurlbut W. Smith; second vice-president, George S. Larrabee; secretary and treasurer, Frederick H. Elliott.

The club plans to give a series of smokers during the winter.

Bronx Club to Visit Show in a Body.

At the annual meeting of the Bronx Automobile Club, 310 Mott avenue, New York, held last Saturday, officers for the ensuing year were elected as follows: President, Edgar T. Weed; vice-president, M. P. Ryder; secretary-treasurer, J. Stuart Blackton; board of directors, A. C. Geyser, chairman; A. W. Wilkens, James Law, W. G. Evynon and J. G. Sauer.

As many members are contemplating the purchase of new cars for the coming season, it was decided at the meeting, to visit the Madison Square Garden show Wednesday evening, January 20, and Thursday afternoon, January 21, in a body, meeting at the Thomas booth between 8 and 8.30 p. m. Wednesday and 2 and 2.30 p. m. Thursday. In this way members will benefit by the experience of their fellow members.

PRESIDENT ELLIOT C. LEE, OF THE MASSACHUSETTS STATE AUTO ASSOCIATION.

SHANLEY-BROKAW 45 MILE MATCH RACE ON ORMOND-DAYTONA BEACH.

One of the most interesting events of the Ormond-Daytona beach races and automobile tournament on the 28th, 29th and 30th of this month, will be the challenge race between B. M. Shanley, Jr., of Newark, N. J., and W. Gould Brokaw, of New York, both amateurs, and both provided with powerful machines capable of high speed. Mr. Shanley will drive his 40-hp. Decauville car which he purchased immediately after Henri Page had made a world record for fifteen miles with it on the Empire City track, scoring 15 m. 7 1-5 s., in the class for machines weighing less than 1,800 pounds. Mr. Brokaw will drive his 40-60-hp. Renault car which made fast time at the Brighton Beach races. The special prize for this event is to be a $500 silver cup, which is now on exhibition at Black, Starr & Frost's, 39th Street and Fifth Avenue, New York. The race will be run in three heats of fifteen miles each with flying start.

FORMATION OF NEW YORK TRADE CLUB QUICKLY PERFECTED.

Pursuant to a call by prominent automobile dealers in New York City, nearly seventy members of the local trade convened last Monday at Hotel Navarre, 38th Street and Seventh Avenue, to organize a trade club.

A board of directors was elected consisting of E. T. Birdsall, A. D. Proctor Smith, E. B. Gallaher, Percy Owen, J. F. Plummer, E. T. Kimball, Col. F. Pardee, C. H. Tangeman and I. J. Woodward. These appointed officers as follows: President, A. D. Proctor Smith; vice-president, E. T. Birdsall; secretary, E. B. Gallaher and treasurer, J. F. Plummer. It was decided to take quarters at the place of meeting where arrangements were made for clubroom privileges. The list of applicants for membership to be acted upon by the directorate had swelled to almost two hundred last Wednesday, including the seventy enrolled at the organization meeting. The annual dues and the initiation fee are to be each $10.

Los Angeles' Show Visitors.

The automobile shows in New York and Chicago will be attended by many Los Angeles dealers. Manager Lull of the Auto Vehicle Company, makers of the Tourist automobiles, has already gone East. Manager Ross R. Foster of the other automobile factory, which manufactures the Shepherd cars, will start the middle of this week. Captain Ryus of the White Garage, will attend the Chicago show and Charles A. Hawkins, Coast manager for the White, will take in the New York show. N. W. Church will attend both shows and W. K. Cowan will attend the Chicago show.

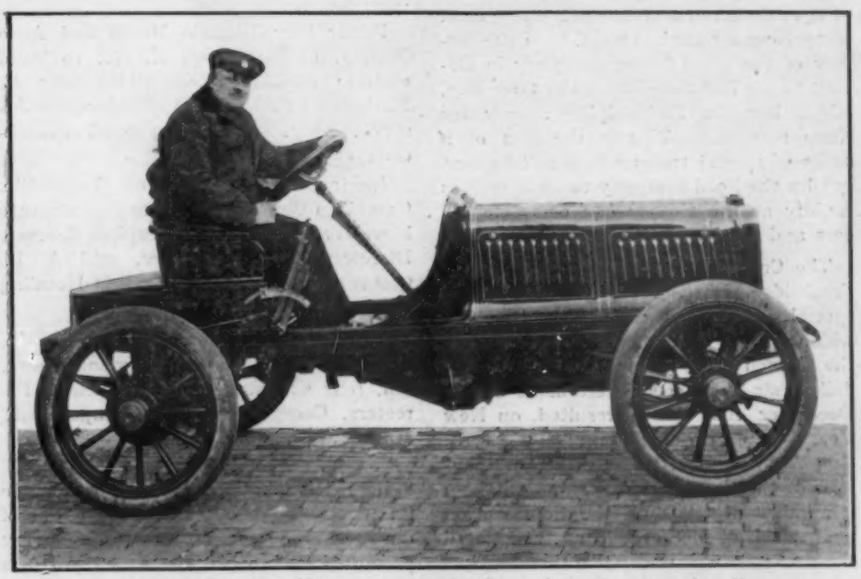
American and Foreign Automobile Fixtures for the Winter.

1904
Jan. 16-23.—Fourth Annual Automobile Show, New York, Madison Square Garden. National Association of Automobile Manufacturers, Madison Square Garden Company and Automobile Club of America.
Jan. 21.—Annual Meeting of National Association of Automobile Manufacturers, Madison Square Garden.
Jan. 22.—Annual Banquet of National Association of Automobile Manufacturers, Café Martin, New York.
Jan. 23.—Annual Banquet of Automobile Club of America. Waldorf-Astoria Hotel, New York.
Jan. 21-22—Special Meetings New York State Automobile Association, A. C. A. Rooms, 753 Fifth Avenue, New York. 10.30 a. m.
Jan. 21-27—Meetings American Motor League.
Jan. 16-30.—Automobile Show. Herald Square Exhibition Hall, New York. Alfred Chasseaud, Manager.
Jan. 23-Feb. 4.—International Automobile Exhibition at Brussels.
Jan. 26-30.—Philadelphia Automobile Show. Automobile Club of Philadelphia and Automobile Dealers' Association of Philadelphia.
Jan. 25-Feb. 6.—Racing Tournament at Daytona, Fla. Ormond-Daytona Sea Beach. Florida East Coast Automobile Association.
Feb. 6-13.—Fourth Annual Automobile Exhibition, Chicago. Coliseum Building. National Association of Automobile Manufacturers and Chicago Automobile Club.
Feb. 6-13.—Annual Meeting and Election of American Automobile Association, at Chicago.
Feb. 8-20.—National Motor Boat Exposition. Herald Square Exhibition Hall, New York. Dr. Robert Taylor, Director.
Feb. 12-24.—Second Annual Automobile Exhibition. Crystal Palace, London. Society of Motor Manufacturers and Traders.
Feb. 15-20.—Third Annual Exhibition at Detroit. Detroit Light Guard Armory. Tri-State Automobile and Sporting Goods Association.
Feb. 29-Mar. 5.—Cleveland Automobile Show. The Grays Armory, Cleveland Automobile Club.
Mar. 6-12.—Second Annual Buffalo Automobile Show. Convention Hall, Buffalo. Automobile Trade Association and Automobile Club of Buffalo.
Mar. 8-12—First Automobile Show. City Hall, Springfield, Mass. Automobile Club of Springfield.
Mar. 14-19.—Third Annual Automobile Show, Boston. Symphony Hall. Boston Automobile Dealers' Association.
Mar. 17.—Start of Touring Trials, Paris to Rome, organized by La France Automobile.
Mar. 19-26.—Motor Car Exhibition, London. Agricultural Hall. Cordingly & Co.
Mar. 20.—Opening of Automobile Festival at Nice, France.
Mar. 21-26.—Fourth Annual Washington Automobile Show. Washington Light Infantry Armory. Washington Automobile Dealers' Association.

The Marr Roadster.

The Marr Auto-Car is now being manufactured for the Marr Auto-Car Company of Detroit, Mich., in one of the large factories in Elgin, Ill., formerly used for the manufacture of watch cases. This little machine was introduced to the public at the Detroit automobile show last February. It is a well designed car weighing complete about 1,000 pounds and having a number of interesting features in addition to its attractive lines and finish. Foremost among these is the pivoted steering column which can be tilted forward against the dash when the driver wishes to get out, and can be adjusted to any of half-a-dozen different steering positions to rest the arms or to suit the preference of different operators. The frame is of channel steel, the springs semi-elliptic and the wheels wood. The rear axle is 1¼ inches in diameter. A variation of speed from four to thirty miles an hour is furnished by the single-cylinder 6 1-2 hp. engine and the planetary transmission. The valves are mechanically operated, the carbureter is of float-feed type, cooling water is circulated by geared pump, and the cylinder is lubricated from a sight feed oiler on the dash. The finish of the car is in automobile red with chocolate trimming.

President J. H. Brown, of the Marr company, will be in New York during the Madison Square Garden show and will have a machine conveniently stored outside the garden.



B. M. SHANLEY IN DECAUVILLE RACER MATCHED AGAINST W. G. BROKAW'S RENAULT.

News Notes and Trade Items.

The Bethlehem (Pa.) Automobile Club is to be reorganized.

In our description of the E. R. Thomas 1904 touring car last week, mention was inadvertently omitted of the important fact that a fan, not shown in the illustrations, will be utilized in connection with the cooling apparatus.

Norris Mason, manager for the New York branch of the Société Franco-Americainé d'Automobiles, secured the exclusive agency in the United States for the Michelin tires while in France visiting the Paris show.

Pending the completion of his new building in Chicago, at Michigan Avenue and 13th Street A. C. Banker is temporarily located at 319 Michigan Avenue, where he will conduct his automobile salesroom until next April.

Alvan T. Fuller, 243 Columbus Avenue, Boston, has secured the Boston agency for the Packard cars for 1904, and is receiving congratulations of the other local agents. He will merely add the Packard to his other lines of cars, without making any other change in the business heretofore carried on.

It is reported that a scheme is under way among Salem, Mass., merchants to use automobiles jointly in the delivery of parcels and packages in and about the outskirts of their city. They had a meeting of their local association last week, at which the subject was one of the items of general discussion.

W. Gould Brokaw and B. M. Shanley of New York and Newark, have agreed to meet in a match race for a $400 trophy cup on the Daytona beach during the Florida tournament. The race will be run in three heats at one, five and ten miles. Each of the drivers will put up $200 toward the prize.

Fred H. Adams has assumed direction of the delivery van department of the Reed-Underhill Company, Boston agents for the Knox. The district for the sale of Knox pleasure vehicles, which is still controlled by Messrs. George Gordon Reed and Arthur Underhill, and for delivery vans, has been extended to include Eastern Massachusetts.

Kenneth A. Skinner, of Boston, who has always handled the De Dion machines in America and practically no others in Boston, expects to have a chassis for his new four-cylinder venture, the Boyer car, in New York in time for the final days of the Madison Square Garden show. Mr. Skinner was one of the first garage men in Boston to undertake any considerable business in renting autos by the hour or day. He has always used De Dions for this purpose, but he has ordered one of the Boyer cars to be sent over from Paris, capable of seating six persons. It will arrive here in the early spring, and he intends to use it at once for renting.

Horace B. Day & Co., of New York, have been appointed general eastern sales agents for the Silent Wolverine, a new touring car made by the Reid Mfg. Co. of Detroit. Show rooms will be opened at 60 West 43d Street, about January 25. The Wolverine will be on view at the automobile show at Madison Square Garden in Space 24, Exhibition Hall.

R. H. Magoon, who has conducted a garage at 572 Euclid Avenue, Cleveland, for the past season, is preparing to move into larger quarters. He has secured the agency for the Pope Motor Car Co.'s product for the coming season and has already sold several two and four cylinder cars. He will exhibit the new models of Pope-Toledo cars at the Cleveland show.

The suit of William Dana against Edward Allen and one, in Buffalo, has resulted in a verdict of "no cause of action." Dana asked big damages for a broken leg caused by his horse being startled by the defendant's automobile in Hamburg. Dana alleged that the automobile was going very fast and that he held up his hand to the driver to be careful not to scare his horse.

The General Electric Company is conducting expensive experiments with gas turbines under the direction of Sanford A. Moss, a gas engine specialist, and there is a strong probability that in the future this type of engine will develop as marked an increase in efficiency over the reciprocating gas engine as the steam turbine is showing over the steam gas engine.—*N. Y. Sun.*

One of the largest single shipments of automobiles ever made was the recent dispatch of fifty complete Ford machines of 1904 design in nine large furniture cars, comprising a complete train, from the factory of the Ford Motor Company in Detroit to the Keystone Motor Car Company, which has the Philadelphia agency for these machines. This is the first of a series of special trains which will be sent out by the Ford company to its agents as rapidly as the factory can complete the cars and thoroughly test them.

The Crest Manufacturing Company, of Cambridge, Mass., recently completed a special racing car called the "Flash," which will be sent abroad to compete in the French races this year. A series of daily tests of its speed were made during December that nearly resulted, on New Year's Day, in a serious accident. T. B. Van Alstyne, advertising and sales manager of the Crest company, while making a number of trials on the Combination Park track at Medford, Mass., negotiated the first mile well under two minutes, but when rounding into the stretch to finish the second mile, skidded to the outside of the track and into the fence with such force that he was thrown over twenty feet and landed in a snow pile at the grandstand entrance. Beyond a severe shaking up and a few scratches he escaped unhurt.

A. C. Morrison, who handles the Peerless in Boston, went to Cleveland over Sunday to confer with his home office regarding the construction of the new Boston garage for the Peerless. The salesroom, in "Automobile Row," on Columbus Avenue, has long been cramped, and it is planned to erect a two-story brick building on Ferdinand Street, just around the corner. In this building there will be a garage floor on the street level for storage of cars, and a repair shop underneath opening on an alley that passes the rear basement door of the present quarters. The floor in the new building will be 93 x 60 feet, without posts. If the plans are approved, it will be completed this summer, and thereafter no cars will be kept in the salesroom except one or two show vehicles, and the storage and repair departments will all be moved to the new building.

Recent Incorporations.

Worthington Automobile Company, of New York City; capital, $200,000. Directors: G. G. Worthington, of Shawnee, Penn.; W. J. P. Moore, of New Britain, Conn., and H. R. Lounsbury, Jr., of New York City.

International Crude Oil Engine Company, of New York City; capital, $25,000. Directors: Thomas Robinson and J. R. Westerfield, of New York City, and H. L. Snyder, of Montclair, N. J.

Owners' Automobile Company, of St. Louis, Mo.; to manufacture and deal in automobiles and bicycles; capital stock, $2,000, all paid. Incorporators: Horace A. Davis, William C. Woods and George L. Moselle.

Power City Electric Motor and Auto Station, of Rochester, N. Y.; to build motors; capital, $6,000. Directors: E. Mathew Van Alstyne, A. Wesley Van Alstyne, George R. Van Alstyne, all of Rochester.

Jamesville Mfg. Co., of Jamesville, Onondaga County, N. Y.; to manufacture bicycles and automobiles; capital, $20,000. Directors, Albert Spencer, and J. H. Olcott of Jamesville and Herbert Hotaling of Syracuse.

Buffalo Garage Company of Buffalo, N. Y.; capital, $30,000; to manufacture, sell, rent and store motor vehicles. Directors, George H. Smith, Benjamin F. Milsom and Byron D. Shultz.

Bartlett's (Texas) first automobile made its appearance during the holidays, one of our leading young business men having presented one to his wife as a Christmas present.—*Houston (Tex.) Chronicle.*